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SCIENTIFIC PAPERS

ABRASIVE REPAIRS OF TRAUMATIC SCARS

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Modern abras ve surgery, as introduced by Kurtin (1) is less than six years old, yet sufficient time has elapsed to demonstrate convincingly that it is the operation of choice in the treatment of many traumatic scars.

When this therapeutic method was first presented in 1952, by Kurtin, for the treatment of post acne pits it was greeted with intense enthusiasm. As time went on, there were numerous modifications of both equipment and procedure. With minor exceptions, the operation remains basically the same as it was when first described. The greatest advance was the application of the dermabrasive method to other cosmetic defects.

Traumatic scars resulting from automobile accidents are produced by cuts from broken glass or from impact with plastic or metal parts of the automobile. They produce the greatest and most grotesque types of disfigurement, with the exception of those resulting from burns. As a result, an attractive face can take on a hideous, gargoylish appearance. The psychic factors accompanying such cosmetic defects are tremendous.

If competent surgical repair were possible at the time or immediately after an accident it could minimize the final scar. Unfortunately, in emergencies, the best type of care is not always possible.

Surgical repair following automobile accidents is frequently performed in small hospitals and in physicians' offices by personnel untrained in plastic surgery. Their greatest concern, and rightly so, is to get wound closure as fast as possible. Frequently these wounds are not even sutured, but are allowed to heal by granulation. The aftermath of such emergency surgery may be bizarre, ragged, puckered and overlapping scars which disfigure the face.

Wherever financial resources are adequate, subsequent cosmetic surgery is performed to improve the appearance. Such surgery, which requires hospitalization, is expensive and causes considerable loss of time. Dermabrasive surgery, which is infinitely less expensive since it is an office procedure and does not require a general anesthetic, can often do the job just as well and frequently much better. If the patient does not have a job which requires facing the public constantly, there is no need to even lose time from work. This economy in money and man

hours may be of great importance. The psychologic factors are of great importance. Not only is there the psychic trauma resulting from disfigurement, but the anxiety attending hospitalization and general anesthesia can also intensify the accompanying decreased morale. An effective procedure, therefore, which is within the financial reach of the average individual and does not remove him from circulation for a long time is definitely an advance in the management of these cosmetic problems.

In addition to traumatic scars, many other cosmetic defects are amenable to abrasive surgery.

Pitted scars resulting from: Smallpox; chickenpox; furunculosis.

Hypertrophic and deformed scars: Post-traumatic; resulting from acne keloids; keloids.

Nevi: Intra-epidermic nevi; nevus flammeus; nevus unius lateralis; spider nevi.

Pigmentations: Chloasma; lentigines.

New growths: Keratoses; adenoma sebaceum.

Miscellaneous: Telangiectasia—from most causes; rosacea and rhinophyma; active lesions and/or scars or discoid lupus erythematosus; senile wrinkling of the skin.

Equipment and Material

1. A flexible cable or cord motor capable of revolving at 12,000 R.P.M., or more, and fitted with a handpiece for holding the abrasive wheels.
2. Abrasive wheels: a). stainless steel wire brushes of various sizes; b). diamond grit wheels of various sizes and degrees of coarseness; c). wheels of Arkansas stone; d). serrated steel wheels.
3. Freon 114 in throw-away cans.
4. Sprayer syringe to apply Freon 114 (dichlorotetrafluorethane) to the skin surface.
5. Plastic bags containing 5 per cent Diethyline glycol in water.

Procedure

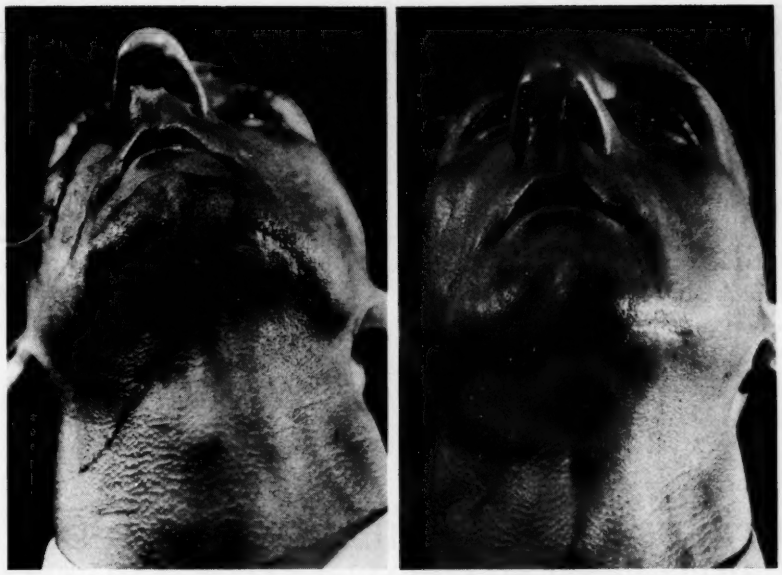
As has been previously noted, the operation is an office procedure. No sterile technique is indicated. The only concession to sterility is to sterilize the abrasive wheels in a solution of zephirin chloride. This is done primarily to prevent cross infection.

The operative site is pre-chilled with the plastic bags filled with 5 per cent Diethyline glycol which has been previously frozen to a mushy consistency in the freezing compartment of a refrigerator. The skin is then frozen to board-like hardness by spraying it with Freon 114 using the especially designed sprayer syringe (3). Approximately two square inches of skin can be frozen at one time. When the proper degree of hardness is achieved, the area is abraded with an appropriate abrasive wheel until the elevated edges are level with the adjacent normal skin. The depressed portions of the scar are abraded by planing the normal skin with feather-like strokes so that they blend imperceptibly into the surrounding skin. When one area has been planed, successive areas are treated in a similar fashion until the whole surface has been abraded. An entire face can be done at one time—in fifteen to thirty minutes.

Although the operation in itself is simple, a certain amount of dexterity must be developed. This can only be achieved by experience. It is useless to describe the motions one uses with the abrasive wheels since it depends entirely on the muscular coordination pattern of the operators. Many motions or combinations are possible. Kurtin used an overlapping short stroke motion. Others used a rotary motion or a cross-hatching pattern. Each operator must develop his own technique.

Postoperative Appearance Management

After the entire site is abraded it will be covered by considerable capillary oozing. There is very little loss of blood. The bloody surface is then loosely covered with non-sterile but surgically clean 3 x 3 gauze flats, held in place with scotch tape. The patient is instructed to remove these bandages as soon as he arrives home, and, if possible, to leave the area unbandaged. If the oozing is too uncomfortable, the operated site can be covered with gauze flats which should be changed every three hours to prevent sticking.



Results of Three Abrasive Operations on Scars Resulting from Windshield Cuts in an Automobile Accident

The oozing usually stops within twenty-four hours, and bandages can then be discontinued. Simple analgesics and/or sedatives can be prescribed if indicated, frequently, however, no medication is needed.

After four days, when a firm dry crust has formed, the patient is instructed to wash his face gently with a mild facial soap and luke-warm water. The crust then begins to separate and completely flakes off in ten to fourteen days.

Sequellae

1). There is moderately intense burning at the treated sites for approximately twenty minutes after the operation. This has abated by the time the patient has left the office.

2). On the second day there is considerable edema. This gradually disappears except for slight residuals in about seven days.

3). When the crusts are completely separated, the new skin is pink and scaly. The scaliness usually disappears in two or three weeks but the pinkness may persist for from one to six months, and in an occasional case longer. It can, however, easily be covered by simple cosmetics.

4). There is, frequently, a line of demarcation between the treated and untreated skin, this lasts for a variable time, but the operated areas eventually blend imperceptibly with the surrounding normal skin.

5). Small miliae frequently occur on the treated areas. They are easily removed by puncture and expression of contents with a comedone extractor.

6). In over 1200 planings, not a single infection has occurred on the face. There have been two cases of superficial infection on the neck which were easily cured with oral antibiotics.

7). Permanent or semi-permanent depigmentation has occurred in two cases where the operative site was on the neck. Three cases of persistent depigmentation occurred when the operative site was on the forearm.

Results

One can expect that this procedure will produce about 65 to 85 per cent improvement. When the scar formation extends to considerable depth, it is not expected that the scar will be eradicated, but the leveling of the scar will decrease its perceptibility. Shallow scars can be completely eliminated.

Comment and Summary

Any scar is an indication for this operative procedure. Since no case has been made worse, the only consideration is how much improvement can be obtained. In the average case sufficient improvement can be achieved, so that the residuals in the severe cases, can be made almost invisible by the application of simple every day make up. Since the operation can be repeated as often as necessary at four to eight week intervals, progressive improvement can be obtained.

Dermabrasive surgery is the operation of choice for the treatment of traumatic scars. It is relatively painless and relatively inexpensive. It entails a minimal time loss and produces from 65 to 85 per cent improvement in most cases.

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DIURETIC THERAPY: SIMILARITIES AND DIFFERENCES BETWEEN CHLOROTHIAZIDE AND OTHER CARBONIC ANHYDRASE INHIBITORS[1]

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The kidneys are primarily responsible for maintaining the volume and composition of body fluids and minor alterations of the delicate renal regulatory mechanisms can result in major alterations in the excretion of water and electrolytes. The most frequent pathological state is that of increased retention of sodium and water in such varied clinical conditions as heart failure, pre-menstrual edema, and kidney disease. Thus, diuretic drugs which decrease renal tubular reabsorption of sodium and water and promote the excretion of these substances in the urine are very important therapeutic agents. It is the purpose of this communication to review some pharmacodynamics of certain diuretic agents, i.e. carbonic anhydrase inhibitors of the sulfonamide variety and a related compound, chlorothiazide.

[1] Presented by Dr. Moyer at the One Hundred Sixtieth Annual Meeting of the Medical and Chirurgical Faculty of the State of Maryland on April 17, 1958.

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Renal Regulation of Water and Electrolyte Excretion

Water Balance: The maintenance of a nearly constant volume of water in the several fluid compartments of the body, under normal conditions, is largely controlled by the antidiuretic hormone (ADH), although other hormones and electrolytes affect the rate of water excretion also. Available evidence indicates that approximately 85 per cent of the glomerular filtrate is returned to the peritubular blood from the proximal tubules by simple diffusion (1). More than 99 per cent of the filtered water may be reabsorbed in the distal tubule by an active process which requires ADH in order to function. This mechanism makes it possible for the kidney

Cardrase, Cumertilin, Diamox, Diuril, Mercuhydrin, Mersoben, Meterox, Neohydrin, Oradon, Rolicton, and Thiomerin are trademark names.

to return water to the circulating blood against an osmotic gradient.

The secretion of ADH is regulated by changes in concentration of sodium chloride in the extracellular fluid and therefore in the plasma (2). Verney (2) has demonstrated end organs similar to the pressor receptors of the carotid sinus that are located in certain of the blood vessels supplying the brain. These organs are referred to as osmoreceptors. Hydration of sufficient degree to only slightly reduce the plasma sodium chloride concentration, causes the osmoreceptors to swell which reduces the output of ADH. This results in an increased excretion of water with little change in salt excretion. The extra water is thus eventually eliminated. Under normal conditions, water intake exceeds requirements and a balance is maintained by renal excretion of the surplus. The renal reestablishment of an isotonic plasma after excessive water intake is then largely due to the functional linkage between the neurohypophysis and the kidneys; the kidney tubules being the final end organ for regulating the amount of water lost from the body.

During a period of dehydration, a converse chain of events takes place. If water is withheld, the extracellular fluid becomes hypertonic, since water is lost through the urine, lungs, and skin without a parallel salt loss. The osmoreceptors respond by stimulating the neurohypophysis to secrete increased amounts of ADH. As this hormone accumulates in the cells of the renal tubules, the kidneys conserve water by reabsorbing more water and secreting a more concentrated urine. From 170 liters of water filtered by the kidneys each day less than two liters is finally excreted as urine. Currently available diuretics do not appear to promote diuresis by any known effect on ADH secretion or ADH function in the renal tubules.

ELECTROLYTE BALANCE: Normally, sodium chloride balance is maintained by the kidneys in a manner similar to the maintenance of water balance. The kidneys retain the minimum amount of salt necessary to meet body metabolic requirements and the excess is excreted in the urine. To maintain a constant sodium chloride concentration in the extracellular fluid requires that the urine must sometimes contain more and sometimes less salt than plasma. The body conserves salt much more efficiently than water and when neither food nor water is ingested, water depletion is the dominant picture. If water alone is administered, it requires considerable time before serious depletion of sodium occurs. The kidneys practically cease to excrete salt under these conditions.

At a glomerular filtration rate (GFR) of 120 ml/min. and a plasma sodium concentration of 140 mEq/l, the sodium filtered per minute will be about 17 mEq/min. Since the rate of sodium excretion per minute usually varies between 0.05 mEq/min. and 0.5 mEq/min., it is apparent that much of the filtered sodium is reabsorbed as is the case with filtered water. During an average day about 24,000 mEq. of sodium are filtered, but the urinary output is likely to be less than 450 mEq.

Of the sodium present in the glomerular filtrate about 85 per cent is said to be reabsorbed by the cells of the proximal tubule. Since a similar amount of water is absorbed by this segment of the nephron, the fluid of the proximal tubule is thought to remain isotonic or slightly hypotonic. Since the glomerular filtrate is presumably a fluid of the same composition as extracellular fluid, which is itself in equilibrium with cell fluid, sodium reabsorption is an active process involving the expenditure of energy. Water then follows passively due to the osmotic pressure difference between intratubular and peritubular fluids which have been established by prior reabsorption of solutes. In the distal tubule, active reabsorption of water occurs under the influence of ADH. There are proponents of the theory that a mechanism also exists for the active reabsorption of sodium in this area of the nephron activated by adrenal cortical steroids (1). Recent work has indicated that the reabsorption may be largely through the existence of ion exchange mechanisms in the cells of the renal tubules which are involved in the reabsorption of sodium (3, 4). Hydrogen, potassium and am-

monium ions are secreted into the tubule lumen in exchange for sodium ions.

HORMONAL CONTROL OF SODIUM REABSORPTION: The active reabsorption of the small but significant fraction of sodium that probably occurs in the distal tubule is controlled by the adrenal cortical steroids. Some confusion has been created by the extensive studies with desoxycorticosterone, a synthetic compound that probably has no physiological counterpart. One important difference between desoxycorticosterone and adrenal cortical extract is that the former is salt-retaining at all levels of plasma sodium. On the other hand, cortical extracts are salt-retaining at low plasma levels of sodium, but may actually increase the output of salt when the plasma sodium concentration is elevated.

The recent discovery that the adrenal venous blood of mammals contained a steroid which was many times more potent than desoxycorticosterone in controlling renal electrolyte excretion resulted in the isolation and identification of aldosterone. It is approximately 30 times more potent than desoxycorticosterone as a salt retaining hormone. Although hydrocortisone may be present in larger amounts in adrenal venous blood of dog and man, aldosterone has a dominant action on electrolyte excretion (5). There is evidence to indicate that the secretion of aldosterone varies according to requirements for electrolyte balance. In normal men, sodium restriction increases the output of hormone and reduces urine sodium. After resumption of a normal sodium intake, the excretion of both hormone and sodium return to control levels (6).

The mechanisms which control the release of aldosterone are uncertain and may be multiple. The concentration of sodium in the extracellular fluid, the concentration of potassium, and blood volume have all been implicated (7). Unlike the other cortical steroids, the release of aldosterone appears to be independent of corticotropin (ACTH). Diuretic agents do not appear to affect these mechanisms.

It is common practice to state that cortical hormones and ACTH, through its influence on cortical hormone secretion, cause a renal retention of sodium and water and a loss of potassium. Actually, these hormones may decrease the elevated plasma potassium level after adrenalectomy of animals without increasing urinary excretion of this ion. Such observations indicate that cellular shifts of potassium as well as a decreased rate of excretion are involved in the hyperkalemia of adrenal insufficiency. Nevertheless, cortical hormones are effective in promoting potassium excretion and may even produce hypokalemia due to increased potassium loss.

The effect of renal hemodynamics on sodium excretion: Interest in the effect of renal hemodynamic factors on sodium and water excretion was aroused by the postulate that sodium retention in edema of heart failure may result from a decrease in cardiac output. This in turn might reduce renal blood flow and glomerular filtration rate. The lower volume of filtrate and hence sodium, presented to the tubules under these conditions was thought to result in more complete reabsorption (8, 9). There is ample evidence that acute reductions in blood pressure may be associated with a decrease in glomerular filtration rate, urine volume and sodium excretion, in both animals and man (10, 11, 12). These changes occur in hypotension from hemorrhage or antihypertensive drug administration. Conversely, elevation of blood pressure from a hypotensive to a normotensive level by infusion of a vasoconstrictor agent usually results in improvement in renal functions including the rate of water and sodium excretion.

These results should not be inferred to indicate that changes in glomerular filtration rate are an important regulatory mechanism for sodium and water excretion nor that depression in glomerular filtration rate is a frequent cause of edema, although in some patients with severe heart failure, glomerular filtration rate may be so depressed that diuresis does not follow an inhibition of tubular reabsorption by diuretic agents. In these instances, improvement of glomerular filtration by the administration of aminophylline intravenously will cause the patient to again respond to diuretics.

The importance of a knowledge of these

regulatory mechanisms is quite obvious when the clinician considers the use of agents which alter function of both normal and pathological renal regulatory mechanisms. The compounds under consideration in this communication act by blocking the reabsorption of sodium in different areas of the renal tubules. This is followed by an increase in the excretion of sodium and a secondary (obligatory) increase in water excretion.

Clinical Use of Carbonic Anhydrase Inhibitors

The use of carbonic anhydrase inhibitors as oral diuretics has found clinical application in the treatment of mild edema due to numerous causes. The primary indications for the use of these drugs include maintenance therapy between parenteral mercurial injections for the treatment of severe congestive heart failure, the treatment of mild heart failure, pre-menstrual edema, and for sodium and water retention during pregnancy when a low sodium intake is not sufficient to control this condition. In the treatment of so-called "iatrogenic steroid edema," the use of carbonic anhydrase inhibitors is of limited value because they produce a kaluresis, which may upset normal acid-base balance, since the primary therapy—namely steroids—also exerts this same pharmacologic effect. In addition, it is necessary to use a diuretic which will produce a persistent diuresis for prolonged periods of time since the steroids usually are being administered continuously when this problem presents itself.

When the use of a diuretic is contemplated, it is desirable to understand the clinical pharmacodynamics of the compound and its potency for producing diuresis. The comparative changes in excretion rates of electrolytes and water as well as the changes in weight are recorded in Table I following the administration of acetazoleamide (Diamox) and ethoxzolamide (Cardrase). In these patients, the average increase in the urinary excretion of sodium after the administration of Diamox in a dosage of 250 mgm. per day for two consecutive days was 35 mEq. per 24 hours. The excretion rate for potassium increased by 36 mEq. per 24 hours, while the chloride excretion rate decreased 9 mEq. per 24 hours. The rate of water excretion increased 0.44 liters per 24 hours, and the weight decreased 0.3 kilograms per 24 hours. By comparison, the increase in the excretion rate of sodium per 24 hours following Cardrase administration was 44 mEq. Changes in the excretion rates of potassium, chloride, and water as well as the change in weight were roughly similar for this drug and Diamox. It is quite obvious that there is no difference between these two agents in the electrolyte excretion pattern.

In contrast to the mercurials, the potency of carbonic anhydrase inhibitors as natriuretic agents is comparatively small. Further, the dose ranges of the carbonic anhydrase inhibitors which produce significant and increasing responses in the excretion of sodium and water are quite narrow so that the establishment of typical dose response curves is difficult. By determining the point at which a further increase in the dose of each of these drugs does not result in an addi-

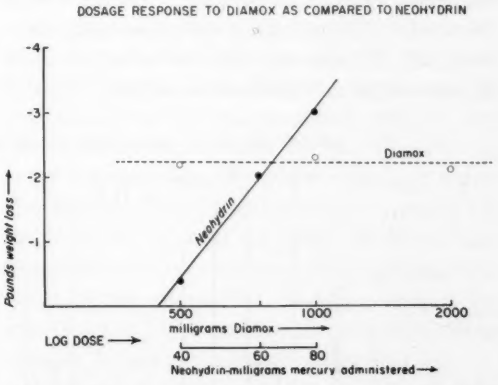

FIG. 1. Dose response curve for the carbonic anhydrase inhibitor, acetazoleamide (Diamox) compared to chlormerodrin (Neohydrin). There is an increasing response to the mercurial diuretics as the dose is progressively increased. At the lower dose of the mercurial diuretic (6 tablets), there is very little difference between the effectiveness of the carbonic anhydrase inhibitor and the mercurial diuretic. However, as the dose is increased, the mercurial diuretic is increasingly more effective whereas this is not so in the case of the carbonic anhydrase inhibitors (Courtesy Moyer et al., J. Chronic Dis. **2:** 670, 1955).

tional increase in the excretion rate of water or electrolytes and a decrease in weight, one is able to compare the relative potency of the carbonic anhydrase inhibitors. Thus, a dose of 2000 mgm. of Diamox produces *no greater* diuresis than does a dose of 250 mgm. (Figure 1) in contrast to the response to the oral mercurial, chlormerodrin (Neohydrin). At a single dose of 4 tablets (40 mgm. Hg equivalent), Neohydrin is not as potent as Diamox but at a dose of 6 tablets it is equally as potent and doses of eight tablets or more produce increasingly greater diuresis, using weight loss (or sodium excretion) as an index of the diuretic response (Fig. 1).

Comparison of the available carbonic inhibitors as diuretics through an analysis of variance reveals no significant difference between any of them in their ability to influence the excretion rates of sodium and other electrolytes as well as water and weight changes at maximum dosages. Consequently, one drug of this type has no advantage over another other than the comparative incidence and severity of side effects.

It is of interest to compare an orally administered mercurial diuretic, chlormerodrin (Neohydrin) (Fig. 2 B) to acetazoleamide (Diamox) (Fig. 2 A) during continued administration of each compound since continued daily diuretic therapy may be required for adequate treatment of patients suffering from severe sodium and water retention syndromes such as in the case of severe heart failure. In Figure 2 B, it may be seen that the changes resulting from the administration of oral chlormerodrin (Neohydrin) increased with continued administration of the drug. However, the changes following the administration of acetazoleamide (Diamox) (Fig. 2 A) illustrate that, although on the first day the changes due to the carbonic anhydrase inhibitor (Diamox) was roughly equal to that of Neohydrin on continued drug administration, there was a continuous decline in response to Diamox over the five-day period. This has been explained as being due to the development of compensatory mechanisms built up against the systemic acidosis which results from the continuous administration of Diamox. Utilizing controlled metabolic conditions, the administration of 30 to 40 mgm. (3 to 4 tablets) of Neohydrin orally produces an acute (two day period of daily administration) increase in sodium excretion that is equal to that following the administration of 250 mgm. of Diamox.

From a practical viewpoint, the differences in therapeutic effectiveness between oral mercurials and carbonic anhydrase inhibitors is not so apparent when these agents are used as single

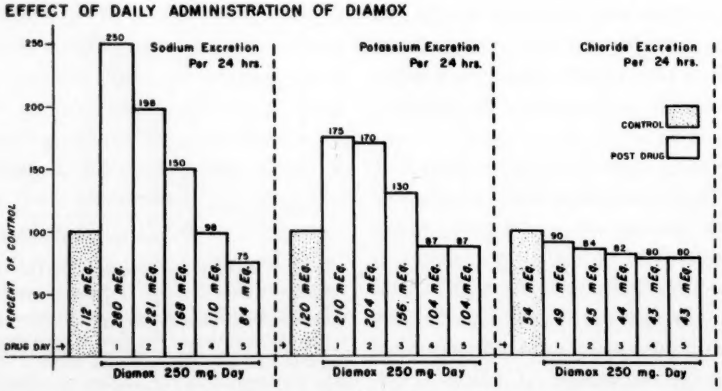

FIG. 2. (A) After the daily administration of the carbonic anhydrase inhibitor, acetazoleamide, there is development of compensation so that continued administration is not accompanied by continued sodium excretion enhancement. The same is true for the increase in potassium excretion. Chloride excretion is not affected by this drug. These observations indicate that an intermittent dosage schedule is mandatory when this drug is used.

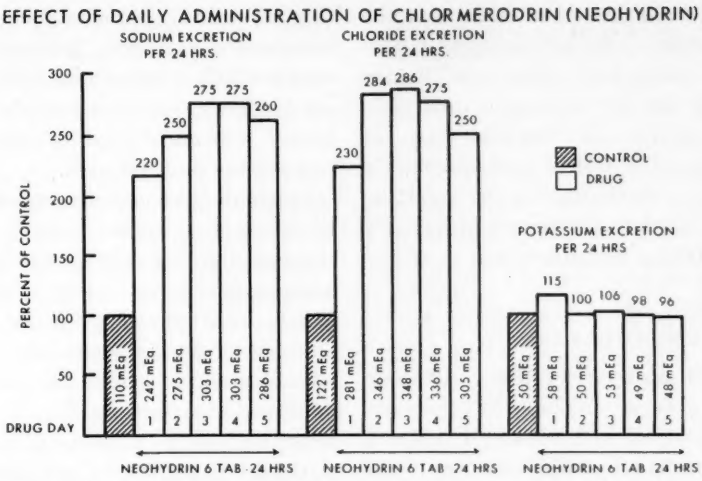
EFFECT OF DAILY ADMINISTRATION OF CHLORMERODRIN (NEOHYDRIN)
SODIUM EXCRETION PER 24 HRS.
CHLORIDE EXCRETION PER 24 HRS.
POTASSIUM EXCRETION PER 24 HRS
CONTROL
DRUG
PERCENT OF CONTROL
DRUG DAY
NEOHYDRIN 6 TAB. 24 HRS
NEOHYDRIN 6 TAB. 24 HRS
NEOHYDRIN 6 TAB. 24 HRS

FIG. 2. (B) Contrasted with figure 2 A, there is an enhancement of sodium excretion on the second to fifth days in patients who are receiving chlormerodrin (Neohydrin) daily. The same is true of chloride excretion, but potassium excretion is not altered. Thus the oral mercurial is continuously effective and is useful in the patients who are in severe heart failure, requiring persistent diuresis (Courtesy Ford and Moyer, G.P. **14:** 119, 1956).

doses. However, when continuous diuresis is mandatory such as in patients with severe heart failure, mercurials become the agents of choice since these compounds continue to produce diuresis when administered daily. On the contrary, the carbonic anhydrase inhibitors can be used only when an interrupted dosage schedule is feasible. One of the following dosage schedules for either ethoxzolamide (Cardrase) or acetazoleamide (Diamox) should be employed, when these drugs are being used for the treatment of heart failure:

1) 250 mgm. as a single dose daily for two or three successive days, allowing at least two days between courses of the drug. Single doses in excess of this amount should not be used since when larger doses are employed, there is no greater increase in sodium excretion but the excretion of potassium increases and this may result in potassium depletion. In addition, the incidence and severity of other side effects increase appreciably.

2) 250 mgm. as a single dose every other day. For maximum response it is sometimes necessary to allow two days between the days of drug administration. This response can only be determined by trial and error on each individual patient. Mercurials should not be given concurrently, but may be given between courses of the carbonic anhydrase inhibitors.

When the carbonic anhydrase inhibitors are used for sodium and water retention associated with pregnancy, the drugs should be used in the same manner that they are used for the treatment of heart failure. However, when used for the treatment of premenstrual tension and edema, the drugs should be started with the onset of tension (usually five to eight days before the onset of the menstrual period) in a dose of 125 to 250 mgm. a day. It appears that Diamox and Cardrase can both be administered continuously until menses begin and in this instance the results obtained by continuous daily administration for five to eight days are excellent.

Acidosis due to renal failure is a definite contraindication to the use of carbonic anhydrase inhibitors. The patients are not only unresponsive to the diuretic, but the effect on the carbonic anhydrase system throughout the body accentuates the acidosis and disastrous results may follow.

Side reactions to carbonic anhydrase inhibitors

vary widely and are dependent largely on the dose. Within equally effective therapeutic dose ranges the side effects to Cardrase and Diamox are quite similar but the therapeutic-toxic ratio is somewhat greater for Diamox than for Cardrase. The smallest dose of these compounds which will produce maximum diuresis should be used. This dose is 125 to 250 mgm. and certainly no more than 500 mg. as a single dose should be employed.

Chlorothiazide

Clinical Pharmacodynamics: Although chlorothiazide (Diuril) inhibits carbonic anhydrase, it has other actions which make it superior to carbonic anhydrase inhibitors of the sulfonamide type for clinical use as a diuretic. Of particular importance is the electrolyte excretion pattern and the failure to develop tolerance with daily administration. The primary effect of the drug is on sodium and chloride excretion (Fig. 3) with lesser effects on potassium and bicarbonate excretion. Consequently, acidosis does not follow the administration of this compound. Hypopotassemia is rarely seen unless the patient is terminal prior to therapy or excessive doses of the drug are used.

Following the administration of chlorothiazide, water excretion seems to be a secondary phenomenon since not only the absolute excretion of sodium and chloride increases but the concentration of these electrolytes in the urine increases also. The greatest responses are seen during the second two-hour period following the oral administration of the drug (Fig. 3) with persistence of the response at a lower level for 12 hours and return to control levels during the third six hour period (eighteen hours after the drug).

Quantitative differences in response are observed as the dose is increased, but there are no significant qualitative differences in the electrolyte relationships. The magnitude of the increase in potassium excretion is less (Fig. 4) than that of sodium (and chloride) even at doses of 4000 mgm. per day (Fig. 4). The peak excretion rate of

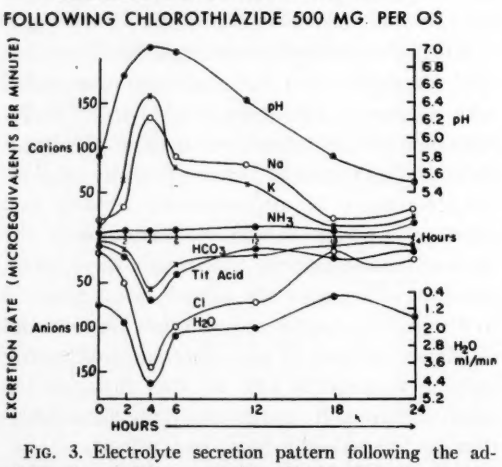

Fig. 3. Electrolyte secretion pattern following the administration of 500 mg. of chlorothiazide (Diuril) given by mouth. There is a primary increase in sodium and water excretion which persists for a period of 12 hours and returns to control values during the subsequent six hours. There is also an increase in potassium excretion but the total increase in potassium excretion during the period of observation is not altered to the same extent as the response to sodium. Chloride excretion was increased both initially and throughout the first 12 hours following drug administration (Courtesy Ford et al., A.M.A. Arch. Int. Med. **100:** 582, 1957).

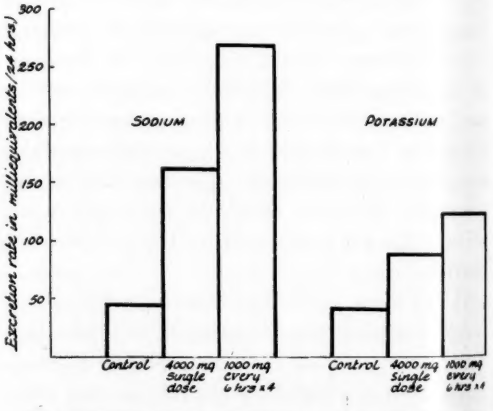

Fig. 4. Twenty-four hour response in sodium and potassium excretion following the administration of chlorothiazide (Diuril) by mouth. The primary effect is that of an increase in sodium and chloride excretion. There is a secondary but less dramatic increase in potassium. The response is greater when the drug is given every 6 hours than when the same amount of drug is given as a single dose every 24 hours.

bicarbonate is observed at the second 2 hour period but the total increase in excretion rate of bicarbonate over a 24 hour period is small. There is an increasing rate of bicarbonate excretion as the dose is increased.

Tolerance does not appear to develop with chlorothiazide. In a patient who received 2 grams of chlorothiazide orally at 6 a.m. for five consecutive days, the maximal increase in the rate of sodium excretion occurred on the second day (Figure 5). However, there was a declining excretion of sodium on the fourth and fifth days as the body stores of this electrolyte were depleted. With continued drug administration this excretion rate of sodium gradually declined until it approximated the sodium intake and remained there as the patient remained at dry weight.

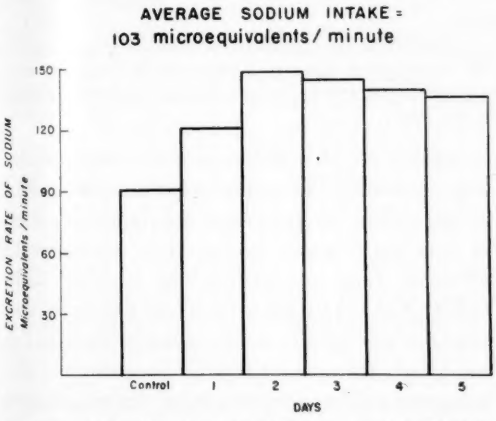

FIG. 5. Following the administration of chlorothiazide daily the sodium excretion loss is maintained indicating that tolerance does not develop. Thus it is feasible to administer this drug continuously for maintaining dry weight in the patient with heart failure (Courtesy Ford et al., A.M.A. Arch. Int. Med. **100:** 582, 1957).

In a patient who received the drug at a dose of 1000 mgm. twice within a twenty-four hour period, the increase in the excretion rate of sodium was repeated after the second dose in a fashion similar to that following the first dose but at a higher level (Fig. 6) and the total increase in sodium excretion per 24 hours was greater than after a single dose of 2000 mgm. Thus, it appears that when given every 12 hours, the first two or three doses are cumulative but after that, continued administration of the drug does not produce a greater diuresis.

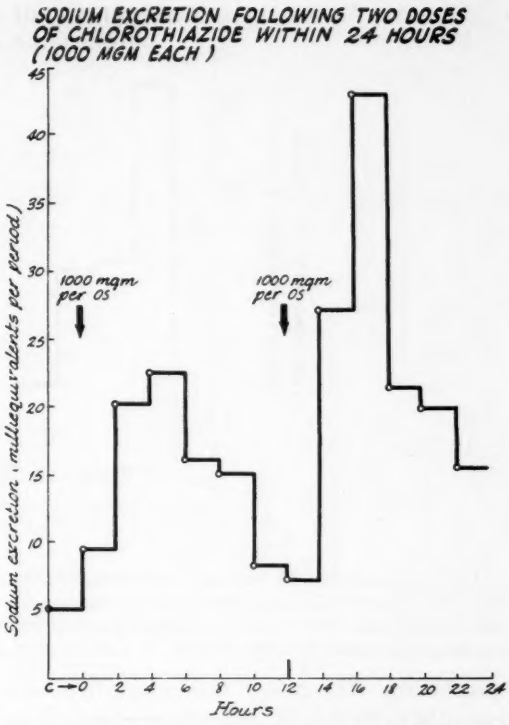

FIG. 6. The increase in sodium excretion following administration of chlorothiazide (Diuril) at 12 hour intervals. There was a greater increase in sodium excretion on the second dose than there was observed following the initial dose. Thus the drug is increasingly effective with multiple doses (Courtesy Ford et al., A.M.A. Arch. Int. Med. **100:** 582, 1957).

In patients who have received 2000 mgm. intravenously over a fifty minute period, the pattern of sodium excretion is similar to that following oral administration but is earlier in onset, shorter in duration, and hence less potent (Fig. 7). Thus, it appears that in the absence of gastrointestinal disease the oral route of administration is superior to the intravenous one, an attribute of note with any therapy requiring continuous drug administration.

In a group of two hundred patients with chronic congestive heart failure receiving chlorothiazide orally, adequate control was observed which was comparable to that achieved with various other diuretics such as chlormerodrin

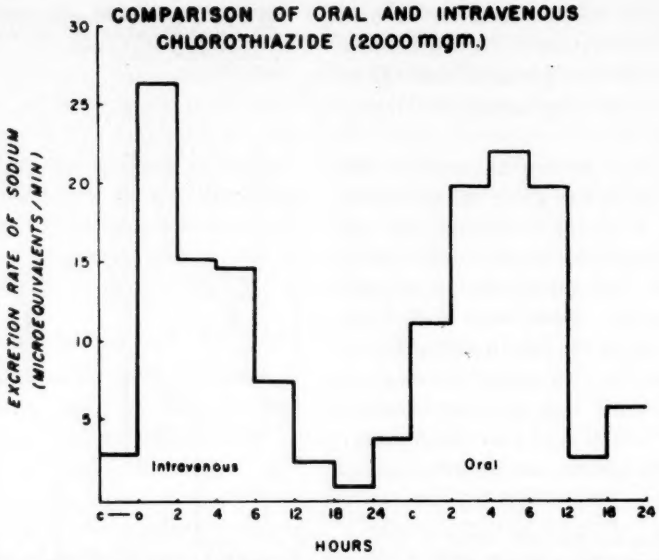

Fig. 7 Comparison of the response to chlorothiazide (Diuril) given orally and intravenously. The response in sodium excretion is more prompt following intravenous administration but by the same token it does not persist as long as it does following oral administration. Thus the 24 hour increase in sodium excretion is greater following oral administration than following intravenous administration (Courtesy Ford et al., Arch. Int. Med. **100:** 582, 1957).

(Neohydrin). The dose of chlorothiazide ranged from 250 to 2000 mgm. daily. No serious toxicity (vomiting, diarrhea, etc.) has been observed with daily use of the drug. Several patients complained of mild nausea, lethargy and weakness during the period of maximum diuresis.

When potency of chlorothiazide is compared with other diuretics, it appears that a dose of 40 mgm. of mercury equivalent of meralluride (1 cc.) administered parenterally, produces an increase in sodium excretion that is equivalent to approximately 1200 mgm. of chlorothiazide administered orally, and approximately 700 mgm. of chlorothiazide is equal to four tablets (or 40 mgm. of Hg equivalent) of chlormerodrin (Neohydrin) administered orally. This dose is approximately twice as effective as acetazoleamide (Diamox) at its maximally effective dose.

In summary of clinical pharmacology of chlorothiazide, this agent represents an advance in the search for clinically effective oral diuretic agents. The agent is a potent inhibitor of the renal tubular reabsorption of sodium after oral administration. It causes a minimal excretion of bicarbonate and therefore, a considerable excretion of chloride. An oral dose has a rapid onset of action within two hours and a duration of action of less than twelve hours. It is continuously effective when administered in repeated daily doses. No metabolic acidosis is produced and minimal side effects are encountered so that it has a high therapeutic index. Comparison of the enhanced sodium excretion following intravenous and oral administration indicate that the latter is the more effective method for clinical use.

Clinical experience indicates that the drug can effectively replace currently available orally and parenterally administered diuretic agents in the management of various disease entities associated with sodium and water retention. The most important of these clinical conditions are congestive heart failure, premenstrual edema, edema of pregnancy, hepatic disease, and the iatrogenic edema associated with the therapeutic administration of steroids. In addition, it may prove to be the most effective agent for the treatment of edema associated with renal disease, although this has not been well substantiated as yet.

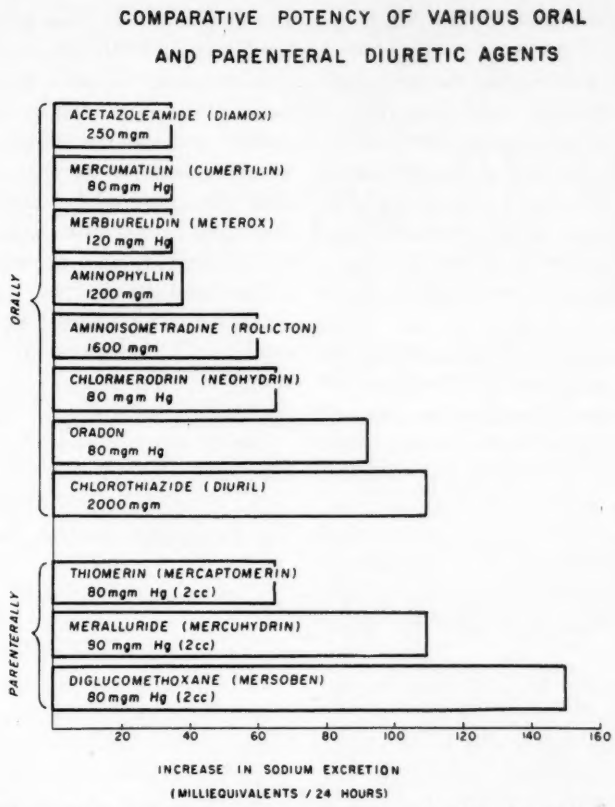
COMPARATIVE POTENCY OF VARIOUS ORAL AND PARENTERAL DIURETIC AGENTS
ORALLY
ACETAZOLEAMIDE (DIAMOX) 250 mgm
MERCUMATILIN (CUMERTILIN) 80 mgm Hg
MERBIURELIDIN (METEROX) 120 mgm Hg
AMINOPHYLLIN 1200 mgm
AMINOISOMETRADINE (ROLICTON) 1600 mgm
CHLORMERODRIN (NEOHYDRIN) 80 mgm Hg
ORADON 80 mgm Hg
CHLOROTHIAZIDE (DIURIL) 2000 mgm
PARENTERALLY
THIOMERIN (MERCAPTOMERIN) 80 mgm Hg (2 cc)
MERALLURIDE (MERCUHYDRIN) 90 mgm Hg (2cc)
DIGLUCOMETHOXANE (MERSOBEN) 80 mgm Hg (2cc)
20 40 60 80 100 120 140 160
INCREASE IN SODIUM EXCRETION (MILLIEQUIVALENTS / 24 HOURS)

FIG. 8. Comparative potency of various oral and parenteral diuretic agents. Chlorothiazide is the only agent given orally that approximates the natriuretic response to meralluride and diglucomethoxane given parenterally (Courtesy Ford et al., A.M.A. Arch. Int. Med. In Press).

CONGESTIVE HEART FAILURE: Chlorothiazide appears to be useful for both initial and maintenance therapy of congestive heart failure. For patients who have significant sodium and water retention and in whom immediate diuresis is indicated, a dose of 1000 mgm. should be given every eight hours. If the degree of diuresis is excessive, the dose can be reduced gradually to as little as 500 mgm. per day. Doses of less than this amount are probably not effective.

As the patient approaches dry weight, the dose of the drug should be reduced gradually until the minimal effective dose has been ascertained. When the dose requirement is less than 500 mgm. every other day, such a patient could probably do equally well on a low sodium diet alone. When chlorothiazide is used in patients who are not in intractable or terminal heart failure, the dietary intake of sodium can be liberalized. It is not necessary to discontinue the drug intermittently for continued therapeutic effectiveness since tolerance to the drug does not occur.

Chlorothiazide can be given intravenously and can be administered in doses of 1000 mgm. over a five minute period without untoward effects. However, the dose requirements by this route are equally as large as by the oral route. The drug should be given intravenously only when drug administration by the oral route is contraindicated.

EDEMA ASSOCIATED WITH HEPATIC DISEASE: Chlorothiazide is effective in promoting sodium and water excretion in patients with cirrhosis. It is probably no more effective than are the

mercurial diuretics given daily by the parenteral route.

Usually diuresis occurs during the first eight or ten days of continuous administration of chlorothiazide. The weight usually levels off at this point despite the presence of residual edema or ascites and further diuresis does not occur. The patient will remain at this weight level with continued drug administration but when the drug is discontinued, sodium and water retention recurs within several days.

When chlorothiazide is administered for sodium and water retention in patients with cirrhosis, the drug should be given in doses of 1000 mgm. every eight to twelve hours. When given less frequently, the drug is less effective. Although a diuretic response is observed after each dose when given infrequently, sodium and water retention occur between doses and the net loss of water and sodium is less significant than when the drug is given every eight to twelve hours.

Chlorothiazide has not been observed to produce untoward effects when administered to patients with cirrhosis except that hypokalemia has been produced on occasion. Apparently, the drug has no adverse effect on hepatic function in patients with liver disease.

RENAL DISEASE: Chlorothiazide has been administered to patients with the nephrotic syndrome of all grades of severity. It is of limited value when used for this purpose, as are all diuretics. It is not much better than intramuscular meralluride (Mercuhydrin) given in doses of 1 cc. every twelve hours and the response is erratic i.e., in some patients with this disease, chlorothiazide is remarkably effective in promoting diuresis whereas in others it is ineffective. It is not possible to predict which patients will respond.

When chlorothiazide is used for promoting diuresis in patients with nephrosis, it is mandatory that the drug be given no less frequently than every twelve hours and a six to eight hour interval is preferable. Five hundred mgm. should be given at each dose initially and, depending on the response, the dose can be increased to a maximum of 2000 mgm. by the oral route.

IATROGENIC STEROID EDEMA: Chlorothiazide is one of the most effective agents for preventing sodium and water retention associated with the administration of adrenal cortical steroids. It does not prevent the development of "moon face" and care must be taken that hypokalemia does not occur, since the adrenal steroids themselves tend to promote increased potassium excretion. The concurrent administration of chlorothiazide enhances this response. Potassium should be administered concurrently in order to prevent the occurrence of this complication.

When administered for preventing steroid edema, the dose of chlorothiazide is 500 to 1000 mgm. given orally every eight to twelve hours. The minimally effective dose should be used.

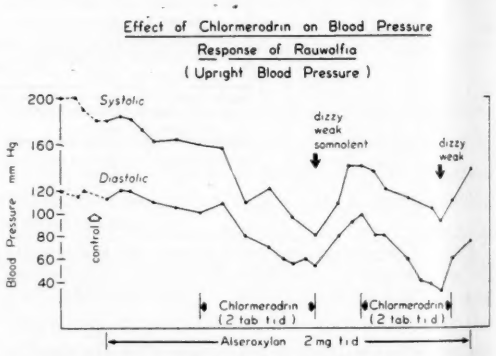

FIG. 9. Potentiating effect of chlormerodrin (Neohydrin) on the blood pressure response to alseroxylon, an extract of Rauwolfia Serpentina.

This is particularly important in this instance since the larger the dose the greater the kaluretic effect and the greater the possibility that hypokalemia will occur.

CHLOROTHIAZIDE IN HYPERTENSION: Recently it has been observed that chlorothiazide will enhance the response to anti-hypertensive agents. For example, when chlorothiazide is given in conjunction with any of the ganglionic blocking agents, the dose requirement of the blocking agent is reduced approximately 50 per cent or more in about three-fourths of the

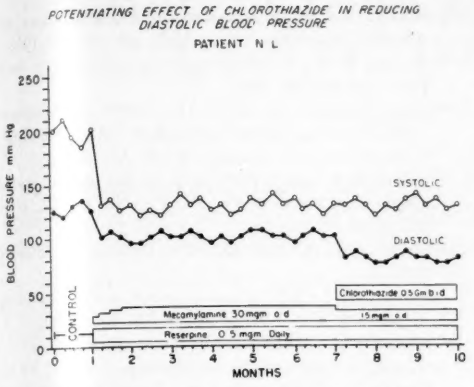

FIG. 10. Blood pressure response to a combination of reserpine and mecamylamine. The patient's blood pressure was well controlled and well stabilized at a dose of 30 mg. of mecamylamine a day. When chlorothiazide was started the dose requirement of mecamylamine was reduced to 15 mg. a day (50 per cent). The blood pressure was equally well controlled on this dose of mecamylamine when given simultaneously with chlorothiazide and there was an additional slight reduction in the diastolic pressure.

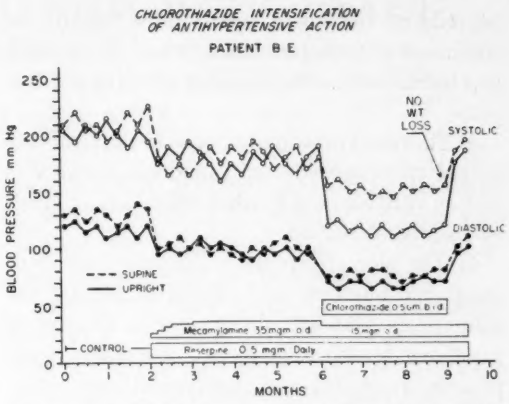

FIG. 11. Potentiation of the orthostatic hypertensive response to mecamylamine by chlorothiazide. This occurred in the absence of any weight loss. When the chlorothiazide was withdrawn there was a sharp rise in blood pressure.

patients. In the remaining one-fourth, no effect on blood pressure or dose requirement of the blocking agents is observed. The mechanism whereby this is accomplished is not completely understood. However, similar effects, although not as pronounced, are also observed with other diuretic and natriuretic agents such as chloromerodrin (Neohydrin) (Fig. 9) when given in adequate doses continuously. In the case of chlorothiazide, the natriuretic effect is persistent and the side effects with chlorothiazide are less marked than with the oral mercurial diuretics. This makes it more feasible to use this agent on a long-term basis in conjunction with antihypertensive agents.

Whatever the mechanism of its action, it appears that chlorothiazide may prove to be an important adjunct in the treatment of hypertension. It is too early to evaluate the long-term effect of this form of therapy regarding blood pressure reduction, and it is not known whether the potentiation of ganglionic blockade produced by chlorothiazide is shared equally by other effective diuretics. It is our feeling, however, that the action is not specific and depends on natriuresis (Fig. 9). With the introduction of new, effective, relatively non-toxic diuretics this problem demands further investigation.

It can be concluded that:

1) Chlorothiazide potentiates the action of ganglionic blocking agents effectively and will probably prove to be a valuable adjunct in the management of hypertensive vascular diseases. When it is administered concurrently with ganglionic blocking agents the orthostatic blood pressure effect continues.

2) If the blood pressure is to be well regulated, the dose of the ganglionic blocking agent must

TABLE I

*Effect of 250 mg. of Acetazoleamide (Diamox) and Ethoxzolamide (Cardrase) on Water and Electrolyte Excretion**

	Ethoxzolamide (Cardrase)		Acetazoleamide (Diamox)	
	Absolute Value	P Value Less than	Absolute Value	P Value Less than
Increase in sodium excretion (mEq./24 hours)	35	.001	44	.001
Increase in potassium excretion (mEq./24 hours)	36	.001	37	.001
Increase in chloride excretion (mEq./24 hours)	−9	.01	−6	.10
Increase in water excretion (liters/24 hours)	.44	.001	.43	.01

*Average values for 10 patients.

be reduced but these agents must usually be continued in those patients in whom there was a real indication for the blocking agent in the first place.

3) The blood pressure response to the combination of chlorothiazide and ganglionic blockade is just as variable as it is when the blocking agent was administered alone.

4) The side effects from the combination of ganglionic blockade and chlorothiazide are the side effects that are observed with the use of ganglionic blocking agents i.e., orthostatic blood pressure reduction and parasympathetic blockade.

5) When the dose of chlorothiazide is reduced below 250 mg. the effect of enhancing the hypotensive response to ganglionic blocking agents is usually lost. This dose of chlorothiazide is also the threshold dose for a natriuretic and diuretic response.

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UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE ANNOUNCES SECOND PINCOFFS LECTURE

Monday, December 15, 1958

The School of Medicine of the University of Maryland announces that the second annual Pincoffs lecture will be delivered by Dr. George Thorn, Hersey Professor of Medicine, Peter Bent Brigham Hospital, Boston. The topic will be "Adrenal Hyperfunction—Clinical Studies." The lecture will be given in Chemical Hall in the old medical building at Lombard and Greene Streets, Baltimore and will start at 8:15 p.m.

This lectureship was established in 1957 by the faculty of the School of Medicine to honor Dr. Maurice C. Pincoffs and commemorate his thirty-five years as Professor of Medicine and Preventive Medicine.

RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE[1]

WILLIAM D. STROUD, M.D.[2]

DR. A. C. DICK, *Vice-President*, presiding: It is a pleasure for me to welcome all of you here and to introduce the distinguished speaker who opens the scientific part of our annual meeting, Dr. William D. Stroud of Philadelphia, Professor of Cardiology at the Graduate School of Medicine of the University of Pennsylvania. When I was a student in Philadelphia, I thought that Bill Stroud's chief interest was the heart clinic which he ran at the Pennsylvania Hospital every Thursday night for the benefit of indigent cardiacs and ignorant students. That was the impression he gave to his patients with his warm care and that he also gave to his students. I recall very well the worshipful looks that all of his patients of that clinic had for him, and I recall distinctly the admiring comments by the students on his methods of teaching. However, on looking at this list, which was furnished me by the research committee of the Maryland Faculty, I find that Bill is also a member of everything important associated with cardiology, both foreign and domestic. However, I still recall him as the warm friend of patient and student, and always helpful in time of trouble to all.

DR. WILLIAM D. STROUD: Thank you, Cope, I spoke before this group seven years ago and I hope you realize how much I am honored by having been asked to speak again. I am very glad that there is an interesting symposium following my talk because maybe some of you will still be here at the end. I am reminded of a friend of mine who was giving a lecture and the people in the last row went out, then those in the second row, and finally there was only one gentleman left. My friend was a little upset and he said "Why don't *you* leave"? The reply was, "I can't, I'm the next speaker!" So, perhaps at least, you will stay for the symposium.

Each year it seems safer to say that rheumatic fever may be almost completely eradicated, as typhoid fever, diphtheria, and recently the paralytic type of poliomyelitis have been. However, if this is to become a reality, it will still mean the continued efforts of the medical profession. That this is a possibility is due to the demonstration that the precipitating factor in rheumatic fever is the Group "A" hemolytic streptococcus, which usually enters the body through the pharynx or tonsils. At present, the chief problem is to discover the individuals who are susceptible to this organism.

It is thought that there is a familial tendency toward susceptibility to Group "A" hemolytic streptococcus just as there seems to be a familial susceptibility to the tubercle bacillus. If this is true, prophylactic measures should be instituted among all members of a family in which a case of rheumatic fever has occurred.

At present there are some projects of screen throat culture testing being carried out amongst school children. Obviously these studies are expensive and time consuming. So far, we are not sure whether such testing of all school children is justified. The Council on Rheumatic Fever and Congenital Heart Disease of the American Heart Association recommends that all patients who have a well documented history of rheumatic fever or chorea, or who show definite evidence of rheumatic heart disease, should be given continuous prophylactic treatment. Other authorities believe it is safe and more practical to stop such treatment after the age of thirty years.

There are two forms of prophylactic treatment recommended. The surest, of course, is an intra-

[1] Presented at the One Hundred Fifty-Ninth Annual Meeting of the Medical and Chirurgical Faculty, May 1, 1957.

[2] Professor of Cardiology, University of Pennsylvania Graduate School of Medicine, Philadelphia, Pennsylvania.

muscular injection of benzathine penicillin G, 1,200,000 units once a month. Many children, and even some adults, dread such treatment. The second form is with tablets of penicillin, 250,000 units twice a day. This type of prophylaxis has the drawback of lack of certainty that individuals, especially children, will take the tablets faithfully. One must be careful of toxic reactions, especially when using the intramuscular route of administration. These toxic reactions demonstrate themselves by urticaria and angioneurotic edema. Also, reactions may develop similar to serum sickness—including fever and joint pains—which may be mistaken for a reactivation of rheumatic fever. A careful history of allergic reactions and previous response to penicillin should be obtained. If there is a history of a severe reaction, particularly of angioneurotic edema, it is safer not to use penicillin. If penicillin is contra-indicated, sulfadiazine or one of the newer sulfonamides may be used instead. The dose is 0.5 gram once a day in children under 60 pounds in weight; and 1.0 gram once a day in adults. If skin eruptions, such as urticaria or a scarlatiniform rash associated with sore throat or fever, develop the drug should be discontinued. Weekly blood counts should be made for the first two months of prophylaxis with the sulfa drugs, because of the danger of the development of leukopenia. If the white blood cell count falls below 4,000 and the polynuclear neutrophils below 35 per cent, the drug should be discontinued. Penicillin is the prophylactic drug of choice, as it will destroy Group A streptococci, whereas the sulfanilamides will not.

It is well recognized that there has been a definite decrease in the incidence of the severe, acute forms of rheumatic fever during the past twenty years. Hence the diagnosis of rheumatic fever has become more and more difficult. This places a strain on the acumen of the physician's diagnostic ability and makes it necessary for all physicians to have as complete information as may be gained by an analytical history, a thorough physical examination and the development of various laboratory studies in order to make a positive diagnosis of rheumatic fever. This difficulty in being sure of one's diagnosis also emphasizes the danger of making a false diagnosis.

The Council on Rheumatic Fever and Congenital Heart Disease of the American Heart Association has published a pamphlet "Guidance in the Diagnosis of Rheumatic Fever" and one on a method of culturing the beta hemolytic streptococci.

The Committee has divided the criteria for diagnosis into Major and Minor. The *Major* are: 1. Carditis; 2. Polyarthritis; 3. Chorea; 4. Subcutaneous nodules; 5. Erythema Marginatum. The *Minor* are: 1. Fever; 2. Arthralgia; 3. Prolonged P-R interval in the electrocardiogram; 4. Increased sedimentation rate, white blood cell count or the presence of "C" reactive protein; 5. Preceding beta hemolytic streptococcal infection; 6. Previous rheumatic fever or inactive rheumatic heart disease.

When I started specializing in this work thirty-eight years ago, it was a very simple matter to make a diagnosis of rheumatic fever. Children or young adults usually had diffuse swollen, tender, extremely painful joints and there was always fever, except in the cases of chorea. But today, cases of rheumatic fever are so often masked, it is well to keep the above mentioned methods of diagnosis in mind. The Committee suggests that the existence of two major criteria, or of one major and two minor criteria, may be considered as indicating a high probability for the presence of rheumatic fever.

As for the treatment of acute rheumatic fever, a recent combined report of a study by the British Heart Association and the American Heart Association indicates that the old, well-recognized treatment with sodium salicylates is best, as compared with the use of penicillin or ACTH. Convalescent care in the Children's Heart Hospital in Philadelphia, which I started in 1924, has totaled some 4,000 cases. Until seven years ago when sulfa drugs were developed, we had an average of five to seven reactivations of rheumatic fever in this hospital a year. It is a

hospital of 60 beds, 30 beds for boys under twelve years of age, and 30 beds for girls. Since the sulfa drugs and penicillin have been used, we have had no reactivations in the hospital.

How should one treat a child with established rheumatic heart disease after evidence of rheumatic activity has cleared up? I believe that, without cardiac enlargement, these children should be treated from the standpoint of physical activity as normal children, no matter what the valve lesion or lesions may be. That is if all evidence of active rheumatic fever has cleared up and there is no evidence of cardiac enlargement, I do not believe that normal activity in sports contributes to the progress of the pathology in chronic rheumatic heart disease or hastens the development of auricular fibrillation or myocardial failure. Too many parents have been unnecessarily made miserable through apprehension and children made psychic invalids by the restrictions placed by physicians on their physical activities. For instance, take a girl of eleven or twelve years whose school doctor has heard a murmur and has told the parents that they should see their family physician—that child, believing that she has a heart condition, when asked to wash dishes will say, "Oh, no! you know my heart!" The child becomes a chronic invalid from then on. Yet children with slight mitral insufficiency may live the full span of life without signs of myocardial insufficiency. Children with mitral stenosis may live normal lives, into their thirties, forties, or fifties, before developing auricular fibrillation or signs of myocardial insufficiency. The same thing holds true in the presence of aortic insufficiency. If we allow these children to lead normal lives—even though in their thirties or forties they may develop congestive heart failure, with or without auricular fibrillation—their families cannot blame us for having allowed them to pursue this physical activity in their youth, because most of us will be dead of coronary disease by that time anyway!

Girls, as they become young ladies, may go through two or three pregnancies satisfactorily in spite of having any one of these valvular lesions, as long as there are no signs of progressive cardiac enlargement. Even with cardiac enlargement, they frequently go through pregnancy with the aid of digitalis. Normal delivery, rather than Cesarean section, has become the delivery of choice for such young women.

When should patients with rheumatic heart disease be subjected to modern cardiac surgery? Obviously, the time is when the myocardial reserve has been taxed to the point where, within a few years, signs of myocardial failure will begin. It is most difficult to determine this point. Roentgen ray films with a barium swallow, at intervals of six months to a year, will help.

If cardiac enlargement is progressing, pulmonary pressure studies through cardiac catheterization should be made. This is especially true in cases of mitral stenosis. This, of all the types of acquired valvular disease, seems to offer the best results through cardiac surgery. I should like to present a case in detail, since this patient's treatment seems to bring up most of these problems.

In 1935 (that is twenty-two years ago), Dr. Anna M. Grove, Director of the Department of Health at the Woman's College of the University of North Carolina in Greensboro, wrote to this young lady's father, "In order that we may make a definite assignment in her case, I am anxious that she should have an examination before she leaves college this Spring and am recommending that you approve of a cardiac consultant. We want to do everything possible to protect your daughter, but the course she has chosen is pretty strenuous (physical education) and whether four years of it would be wise or not, we should determine before she undertakes it. Her enthusiasm for the work is unbounded and might possibly lead her to overdo, if she does not find herself willing to cooperate." She was sent to me on July 11, 1935. She had gone out for athletics. She told me that if she completed her course as a physical instructor, she would have little strenuous exercise after three years. She had had rheumatic fever three years before, in 1932. I

found no evidence of cardiac enlargement. There was a snappy first sound at the apex and a short systolic murmur and in the left lateral decubitis, there was also evidence of a late diastolic murmur.

I would like to emphasize that in examining the heart, in my opinion, the patient should always be examined while lying on the left side. It is so difficult to persuade students, interns, or even physicians, to do this. It is a very simple maneuver and it will bring out so much more in auscultation than one can obtain by listening to the heart with a patient lying flat, especially in patients with thick emphysematous chests. You will read in the history and physical examination "distant heart sounds, weak heart sounds." However, if you turn that person over on his left side, so that the heart drops against the stethoscope, you can hear perfectly normal heart sounds, if the heart is normal.

It seemed quite reasonable that the patient mentioned above had had a definite attack of rheumatic fever in 1932, and that at the time of examination she had rheumatic heart disease with mitral insufficiency and slight stenosis. Her general physical condition was excellent; electrocardiograms normal; orthodiagram showed no evidence of enlargement of the heart. I, therefore, believed that, in the absence of any evidence of rheumatic activity, we were justified in allowing this lady to complete her course in college. I doubted if the physical efforts entailed would play any part in the further development of her cardiovascular condition, and by letting her complete her course we were definitely helping her morale and perhaps preventing her from developing a cardiac neurosis. However, I advised a thorough checkup every year.

Dr. Grove very kindly accepted this recommendation and let the lady continue. A year later, while at camp, she climbed Mount Mitchell—which is 6,711 feet high—with no symptoms. That, of course, was natural because she had not developed any cardiac enlargement. Then, in 1937, another year later, the only difference in the findings was that the diastolic murmur at the apex was more prolonged and was present even without exercise with the patient lying on her left side. Then I didn't see this lady for thirteen years. She told me that she had been turned down for life insurance two years before. She had been teaching physical education at San Jose State College in California, where she played tennis and swam without symptoms. This was fifteen years after I first examined her. The findings were the same, typical of mitral stenosis but without any evidence of cardiac enlargement.

In 1953, she had a rumbling diastolic murmur with a snappy first sound and there were signs in the X-ray, with a barium swallow, of slight enlargement of the left auricle.

In June 1955, there were progressive signs of enlargement. So I decided that the time had come when operation was indicated—i.e. commissurotomy. This was done in July 1955 at the Pennsylvania Hospital by Dr. John W. Raker. He found the mitral valve diameter to be one and a half centimeters, and no evidence of regurgitation. The patient never had had a systolic murmur. Dr. Raker divided the cusps and after the operation was over, he felt that he had a mitral valve opening of about three centimeters. That is twice the pre-operation size. There was moderate calcification along the anterior valve leaflet.

Recently I heard from this lady that everything was going well. She is still teaching, playing golf, and carrying on the normal activities of a woman forty-one years of age—without any unusual shortness of breath.

The question is: "Will she develop auricular fibrillation and/or congestive heart failure at a later date than she would have if she had not had the operation"? Also, should she be digitalized with the thought that the increased tonicity of the myocardium, which digitalis is supposed to produce, will slow up the progressive cardiac enlargement so that ultimate congestive failure will not appear as soon as it would without digitalization?

It is a question, in all of these individuals at the time when one believes cardiac enlargement has gotten beyond normal and is progressive, whether they should be digitalized or not. I had an interesting experience with digitalis a few years ago. An eighty year old doctor who, I believe, hadn't quite kept up with the progress in the use of digitalis, sent me a patient. I had an electrocardiogram done and the tracings looked as if she was digitalized. I phoned the doctor and asked him if the lady had been digitalized. He said "Yes, I gave her a thorough gynecological examination." Well, that sort of put me back on my heels, but finally I got across to him what I meant. He said: "Well, she has had some digitalis but she only had a grain and a half, four times a day, for the last month. It couldn't have had any effect on the electrocardiogram because I stopped it two days before she came to see you." So, you see, some of the older doctors have not kept up with the use of digitalis at the present time.

Should I have waited until the young lady developed early signs of myocardial insufficiency? I decided against waiting. I believe that, once the myocardium fails, it is impossible to restore the efficiency completely, even with digitalis and a commissurotomy, for more than an average of five years. Time will tell, but it seems to me that if commissurotomy is to be performed, it should be done just before pulmonary hypertension gets to the point of producing fatigue, nocturnal or exertional dyspnea, rupture of pulmonary capillaries with hemoptysis, and, finally, right-sided heart failure with engorgement of the liver and peripheral edema. In pure, or predominant, mitral stenosis, *the left ventricle will remain normal in size*. Should the left ventricle be enlarged, it indicates an accompanying aortic valvular disease, or marked mitral insufficiency, or systemic hypertension. Under such circumstances, one must realize that mitral valve surgery may not be effectual. If left ventricular enlargement is great, it may contra-indicate commissurotomy.

At present, I believe commissurotomy, in properly chosen cases, has been a great contribution to the treatment of those suffering from rheumatic heart disease. In the hands of the outstanding cardiac surgeons, the immediate mortality rate is less than two per cent.

I am less enthusiastic about operative procedures for patients with aortic stenosis, or those with mitral insufficiency alone. Purse-string operations are being developed for cases of mitral insufficiency, but I am not sure they have reached the point where I should recommend many cases for the procedure.

Finally, we must be careful to use adequate prophylactic procedures in all patients with rheumatic heart disease who must have dental surgery, in order to prevent the development of bacterial endocarditis. We must also be on the lookout for cases of bacterial endocarditis, since about 90 per cent of such patients can be cured with adequate penicillin therapy.

1011 Clinton Street
Philadelphia 7, Pennsylvania

LICENSE REVOCATION

The Board of Medical Examiners of Maryland on June 19, 1958 revoked the license to practice medicine and surgery in the State of Maryland issued to Lorenzo B. Evans. The sixty days during which Dr. Evans might have appealed have expired.

RECIPROCITY OR ENDORSEMENT FEE

The Board of Medical Examiners of Maryland has increased the fee for reciprocity or endorsement of the licenses of other States, and National Board Certificates from $50. to $100. This action is effective as of September 15, 1958.

THERAPEUTIC SUGGESTION AND HYPNOSIS IN EVERYDAY PRACTICE[1]

JACOB H. CONN, M.D.[2]

Therapeutic suggestion is a basic principle in the art of every-day medical practice. An enthusiastic doctor who prescribes a "wonder" drug usually obtains the effect that his patient has been told to expect. An investigator who believes implicitly in the beneficial result of Thorazine® can achieve a marked improvement in 77 per cent of his patients, while a more critical colleague only gets 10 per cent moderate improvement in a comparative series of cases (13). When the new drug becomes less popular, its therapeutic effect becomes markedly reduced. This is what occurred after the introduction and initial wide acceptance of bromides, chloral hydrate and the barbiturates, each of which was hailed as a "wonder" drug, and it also may happen to the "tranquilizers."

Our medical forefathers were more aware of the personal influence of the physician than we are at present, since a new "miracle" drug arrives by mail almost every day. Sir Daniel Wilks in an address delivered in 1894 was of the opinion that, "To sit down in one's chair daily and write on a piece of paper the name of some drug for every ailment, without exception, which comes under our observation is (in the present state of medicine) an absurdity and is simply pandering to human weakness . . . I know of no more successful practitioner than the late Sir William Gull and his treatment was rational, but he did not credit any particular drug with the properties ascribed to it by the patient. His prescriptions very often consisted of nothing but colored water" (22).

[1] Presented at the One Hundred Sixtieth Annual Meeting of the Medical and Chirurgical Faculty of the State of Maryland, April 17, 1958.

[2] Assistant Professor, Johns Hopkins University School of Medicine; Associate Editor, Journal of Clinical and Experimental Hypnosis.

Older physicians can recall when medicine, to be really effective, had to have a bitter taste. If it had a bad smell, the patient was even more satisfied. Times have changed and medicinal formulae have become more elegant, but the effects of suggestion have remained unaltered. The value of the placebo has been brought to the attention of the profession by a number of investigators (14, 15, 20). The term, placebo means "I will please," and represents the influence of the doctor upon whom the patient depends for both care and emotional support. Every medical procedure includes the same fundamental ingredient, the personal worth of the doctor. The actual cause of a patient's improvement may escape the doctor's attention, but any procedure is helpful if the patient believes that it is. The good result may be inadvertent, as in the case of the patient who reported that he was very much improved since his last visit. When he was asked what had helped him most, his reply was that it was due to the "treatment" during which a cuff had been wrapped around his forearm, then compressed and released several times until his circulation had returned to normal! Similar improvement has been reported following an electrocardiogram "treatment."

We may smile at the naiveté of these patients, but the recent popularity of natural childbirth is evidence that therapeutic suggestion still is with us and always will be. I quote Dr. N. Eastman, "As for myself I have always regarded the breathing exercises as pure bunkum. The only end they serve, as I see it, is to give the parturient something to think about other than her labor pains. If, instead of being taught ways of breathing, she were drilled in some form of mental gymnastics . . . and was made to believe that assiduous concentration on this mental arithmetic would produce natural childbirth, the end

results in my opinion would be equally good" (12).

I agree unequivocally with Professor Eastman's astute observation. It has been demonstrated repeatedly that when a patient does not pay attention to a pain stimulus, he is not quite as aware of its noxious effects. This is just as true for the parturient, who is preoccupied with her breathing exercises, as for the wounded soldier under stress of combat. The pain threshold can be raised by concentrating on some unrelated subject, by distraction, such as repeated loud noises, and by suggestion especially if combined with relaxation (20, 23). It, therefore, is very probable, as A. Mandy has indicated (17) that the most successful candidates for natural childbirth are the best hypnotic subjects.

There is absolutely no difference in kind between hypnotic suggestion and the waking suggestions which already have been described. The arthritic invalid, who believes that his condition is being effectively treated while seated in the pit of an inactive uranium mine, will obtain the same temporary relief as the patient who receives post-hypnotic suggestions.

Hypnosis is nothing more than the suggestive, placebo effect presented in a specific interpersonal setting. It is not just a state of mind, but the end result of various psychologic processes (1). A patient may be more suggestible when fully awake. The doctor who tells him "You are beginning to look better. You are one of my best patients and I expect you to improve even more during the next few weeks, literally is bringing 'new life' to this patient. Another may be more suggestible when asleep. There are those who respond best to suggestions in the light stage of hypnosis while about 10 per cent of subjects are capable of developing the deeper, somnambulistic phase.

Hypnosis is not sleep. The electroencephalogram, the basal metabolic rate, and deep reflexes of the hypnotized patient are normal (10). Hypnosis is imitation sleep which is in itself, the product of cumulative suggestions. The practice of hypnosis is based upon the art of combining 'directed attention' with 'relaxed detachment' so that their effects can be developed to the highest possible degree for each patient. Hypnosis comprises a number of independent psychologic transactions, each augmenting the other until a special type of interpersonal relatedness is established which is the trance state.

The ideal patient is intelligent and willing to cooperate. He must be able to concentrate on what is being said, and to believe that whatever the doctor says will happen, can and does happen. In brief, if the patient will look where you tell him to look, if he will pay attention only to what you say to him, and nothing else, if he will become passive and let things happen, and if he can implicitly believe that you have the power to predict what will occur, then he can be hypnotized effectively.

The doctor, in turn, must be convinced of his ability to succeed and must learn to overcome the feeling of self-consciousness during the introductory phase when he is instructing the patient how to act and what to expect.

Hypnosis has been used to relieve pain in terminal cancer (2), in severe burns (11) and in minor and major surgery (18–19). It is helpful in reducing anxiety in dental care and obstetrics (15) and has been of value in the treatment of habituation, obesity, stuttering and skin conditions (21). In psychiatric practice I have used hypnotherapy in the treatment of neuroses, sex offenders and severe hysterical depressions (3–9).

Illness always is an emotional, uniquely personal affair, as well as a mechanical, physiological process. The sick patient is anxiously seeking for someone to take care of him who will relieve his distress and, therefore, endows the physician with the power to heal. Therapeutic suggestion and hypnosis both utilize the patient's faith in the doctor, and belong in the armamentarium of every practicing physician.

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COMMITTEE FOR THE STUDY OF PELVIC CANCER[1]

BEVERLEY C. COMPTON, M.D., SECRETARY

The Committee for the Study of Pelvic Cancer meets monthly, October–June, for the discussion of selected cases. All physicians are cordially invited to attend these meetings.

ABSTRACTS OF CASE DISCUSSIONS

CASE 1. The patient was a 42-year-old white female, married, gravida 4 0 2 4. In 1952, she had a supravaginal hysterectomy because of menorrhagia. In February of 1957 she had an episode of vaginal bleeding lasting for about a week. She consulted a physician and was told that she had "an ulcer on her womb." This was treated by cauterization and she had no further trouble until March 1958 when she began to have intermittent vaginal bleeding. She consulted a physician about six weeks after the onset of symptoms. A pelvic examination was made, the cervix cauterized and the patient advised to go to the hospital clinic. She was seen in the clinic on May 15th and examined but "recent cauterization prevented further study." She was asked to return in six weeks for a biopsy and smear. She returned at that time reporting that she had had no bleeding since cauterization. On examination it was noted that the cervix bled easily on contact and that a small ulcer was present. A Papanicolaou smear was taken and reported as class IV. A biopsy was reported as showing chronic cervicitis. The patient was admitted to the hospital on July 20th and a cervicectomy was done. Pathological report: Squamous cell carcinoma, uterine cervix. The

[1] Under the auspices of the Medical and Chirurgical Faculty and the Maryland Division of the American Cancer Society.

patient received deep X-ray therapy post-operatively.

Chairman: Would you care to discuss this case for us?

Visiting surgeon: First of all I would like to know a little more about the microscopic description of this cervix. Was it definitely invasive, borderline, or how is it described?

Visiting surgeon: This is one of our cases. I do not have the pathological report here but it was definitely invasive, probably type II. It is my recollection that this patient was cauterized twice—a few weeks before she came to the hospital and the day she came to the clinic. When we first saw her the cervix was so cooked that you could not tell a thing. We asked her to come back in six weeks. I suppose the cervix might have been healed in a month and we could have asked her to return sooner. The biopsy which was taken at the time she returned for her second appointment, was reported as showing only chronic cervicitis but the Papanicolaou smear was reported as class IV. Because of the positive smear we decided to admit the patient for a cold cone. However, at the time of operation it was felt that adequate conization would have left only a shell of the cervix, so it was decided to take all of it.

Visiting surgeon: Do you know if the first slides were reviewed following the final diagnosis?

Visiting surgeon: I cannot say positively but I don't believe they were. It was thought definite that they showed chronic cervicitis.

Visiting surgeon: It may have been missed on biopsy, but I am thinking of a case where a total hysterectomy was done and the cervical specimen signed out as chronic cervicitis with foci of atypism. The pathologist was interested in getting some particularly good slides showing atypism so he cut further sections and these showed carcinoma-in-situ. He kept on cutting and found invasive carcinoma.

Committee member: With a class IV smear, I should think this patient should have had at least a re-biopsy immediately. Our experience with class IV smears is that they give a high percentage of accuracy as to the presence of malignancy.

Committee member: Do I understand that the first plan was to do a cold cone on this patient?

Visiting surgeon: Yes, a conization was planned. Because of the class IV smear it was felt that further study should be made even though the biopsy was negative. At the time of examination under anaesthesia the cervix was found to be very small, and it was thought that if an adequate cone was done, it would leave only a shell of the cervix. It was then decided to go ahead and remove the cervix.

Committee member: It was an operating room decision then?

Visiting surgeon: Yes, that is right.

Chairman: There is nothing much more difficult to treat than a cervical stump. I would think this patient's prognosis was relatively poor even after post-operative deep X-ray therapy.

This case was listed for discussion because of the sub-total hysterectomy and the later development of carcinoma in the cervix. The patient may even have had carcinoma at the time of the hysterectomy. Later, when she developed bleeding, the cervix was cauterized without other investigation. When her symptoms recurred, the cervix was again cauterized without taking a biopsy or smear. They finally did get laboratory help but the diagnosis was not made until after surgery.

Is there any other comment on this case?

Committee member: The fact that cauterization was done without first taking at least a Papanicolaou smear led to considerable delay in this case. I am sure that is obvious to everyone here but I think it is worth emphasizing.

Committee member: I would like to make one other comment. It is amazing and almost unbelievable to me that a cervix which actually showed as much invasion as described could have had a pre-operative biopsy that was negative.

Chairman: I will agree that it is improbable, but not impossible.

I think there is no doubt that there was considerable delay in establishing the diagnosis in this case and that it should be classified "physician delay."

CASE 2. The patient was a 59-year-old white female, married, gravida 6 0 0 6. She stated that her regular menstrual periods stopped in 1948, but she continued to have intermittent spotting. She was seen in the hospital gynecological clinic in regard to this in February of 1949. A cervical biopsy was taken and reported as squamous cell carcinoma. A repeat biopsy was reported as chronic cervicitis. The patient continued to have vaginal spotting almost daily but she did not return to the clinic until December of 1957. A biopsy taken at this time was reported as squamous cell carcinoma.

Diagnosis: Squamous cell carcinoma, cervix, international classification, stage I.

Treatment: Radium and deep X-ray therapy.

Chairman: This is one of our cases and I believe we have some further information on it.

House officer: The first thing is that the 1949 biopsy is not a very good one—the slides are poor. We have reviewed these slides and agree that they do show carcinoma, although, as I have said, the slides are of poor quality. The repeat biopsy shows only chronic cervicitis. We have wanted to cut further sections from the original block but somehow and sometime some blocks were stored too near the heat in the laboratory and this particular block is fused with some others so that you can't be sure which is which.

We do not know exactly how this patient got lost but she was not seen in the interval 1949–1957. Actually she got back to us rather accidentally. Last December she had a tooth-ache and went to her local medical doctor in regard to this. Apparently he asked her about her general health and she told him about the spotting. He then sent her back to the hospital. She is still a stage I, and an early I. Her symptoms had continued the same over the years—spotting but no real bleeding at any time.

We have here the slide from 1949 if anyone would care to look at it. So far, everyone to whom we have shown it agrees that it shows invasive carcinoma.

(All of those present at the meeting who looked at the slide agreed that it did show carcinoma.)

Visiting surgeon: Don't you think there is a possibility that this was the wrong biopsy—that is a biopsy belonging to another patient? With this amount of delay before the second positive biopsy, it hardly seems possible that the disease could still be a stage I.

Chairman: It is possible, of course, but I do not think probable. All of the cases which we are presenting today have aspects of the unusual rather than the usual.

Visiting surgeon: Has anyone here ever seen invasive cancer smolder as long as this?

Committee member: I have not. I believe this would be a record as far as I know, but I don't think it is impossible.

Committee member: How has this patient responded to treatment?

House officer: She has done very well. She has had two radium applications and a full course of deep X-ray therapy.

Committee member: In theory, if the disease is low-grade, it might be quite resistant to radiation.

Radiologist: I do not believe that. At least, it is not consistent.

Chairman: Would you care to enlarge on that a little for us?

Radiologist: I am merely complaining about the number of times I am asked to look at a section and tell whether or not the tumor will be radio-sensitive. You cannot tell. We have rather recently had a case where the sections showed the wildest looking tumor you ever saw. It looked hopeless, but responded beautifully to radiation.

Chairman: How shall we classify this case?

Committee member: I think this should be called "institutional delay," because the patient should have been followed. Obviously there was a great deal of patient delay.

Chairman: Yes, I agree. And I think it is hardly necessary to mention that if you once

have a diagnosis of cancer, the patient should be followed and treated.

CASE 3. The patient was a 45-year-old negro, married, gravida 2. She was admitted to the hospital April 15, 1958, on the medical service with a diagnosis of pneumonia. On physical examination a mass was noted in the right breast. The patient said this mass had been present for two or three months. A routine pelvic examination revealed a possible pelvic mass and a gynecologist was called in consultation. The patient had had no irregularity of menses and no irregular bleeding. Biopsies of the cervix were taken and reported as showing early squamous cell carcinoma with questionable invasion. On May 8th, the patient had a right radical mastectomy or adenocarcinoma. On May 29th, a cold cone of the cervix was done and reported as intra-epithelial squamous cell carcinoma with glandular involvement, no stromal invasion. On June 9th, the patient had a total hysterectomy, with a wide vaginal cuff, and a bilateral salpingo-oophorectomy.

Chairman: Would anyone care to say anything about this case?

Visiting surgeon: This case has been an interesting one to us. The patient was admitted with an early diagnosis of pneumonia. The breast mass was discovered and was considered clinically to be carcinoma—there was a hard, non-tender mass about as big as the end of your thumb. Our resident was called in for gynecological consultation and he can tell you further about the case.

House officer: I was asked to see this patient because the medical house officer on doing a routine pelvic examination had felt a mass, which was a myoma, and asked me to see her in regard to this. She had no complaints referable to the pelvis. On examining the cervix, the surface epithelium just peeled off. I thought she had a stage I carcinoma. Biopsies were taken but were not considered adequate to establish the question of invasion. It was felt that the breast lesion needed treatment more urgently than the cervical lesion and a radical mastectomy was done before any further procedure to establish the diagnosis regarding the cervix. Also at the time of this surgery a lung biopsy was done because there was some question of a metastatic lesion there, but this proved to be a non-specific inflammation. When the patient had recovered sufficiently we did an extensive conization—actually much of the cervix was removed. Even after this there was some question in our minds as to whether or not there was early invasion. The operation we did was practically a modified Wertheim, with dissection laterally and taking a wide vaginal cuff. The sections following surgery did not show any carcinoma.

Chairman: We do not often see a case which is diagnosed prior to symptoms. It was through a remarkable set of circumstances that this case was diagnosed and I think the medical and gynecological staffs are to be congratulated. The patient probably should be congratulated, too, on surviving two such major surgical procedures. Some might wonder if radiation would not have been a little less hazardous, but now that it is all over the patient probably has had the best treatment.

Visiting surgeon: In connection with this case, I would like to ask an opinion of this group. If after investigation, conization, etc., the lesion is considered very early, intra-epithelial for the most part, when do you classify it as zero and when do you consider it invasive?

Chairman: Dr. TeLinde, would you care to answer that question?

Dr. TeLinde: The question is not easily answered in a completely definite manner. When there is glandular invasion to even a maximum degree, the lesion is still considered a zero by general agreement of those of us who have been interested in this subject. *Theoretically* when the stroma is involved, even to a slight degree, the case falls into group I. Often there is a great difference of opinion among pathologists as to when one is justified in diagnosing invasion. For example, when a gland has been filled completely with malignant cells, these cells continue to multiply and all glandular epithelium is

destroyed. A cross section of such an area shows the mass of cells lying free in the stroma. Is this true invasion? The contour of the mass of cells and its proximity to partially filled glands suggest its origin in a gland and yet no trace of the gland remains. In other cases just a few malignant cells seem to be free in the stroma. For *practical* purposes we classify such cases as stage zero and treat them accordingly.

I am sure the authorities who were responsible for the international classification were acquainted with these difficulties when they defined stage zero as "carcinoma-in-situ and allied conditions." I assume they considered cases such as I have just mentioned as "allied conditions."

Chairman: In the case under discussion there was apparently difficulty in determining the question of invasion. There is no question as to delay and the case falls into our classification of "asymptomatic detected cases."

STATISTICS

Total cases to July 1, 1958	1754
Classification:	
Patient delay	731
Physician delay	128
Physician and patient delay	119
Institutional delay	40
Institution and patient delay	40
Institution and physician delay	7
Institution, patient and physician delay	3
Inadequate or improper treatment	21
Delay due to laboratory error	5
No delay	598
Asymptomatic detected cases	50
Unclassified to date	12

* * * * *

Letters Of Interest

University of Maryland
School of Medicine
Baltimore 1, Maryland
August 15, 1958

Dear Members of the Medical and Chirurgical Faculty:

The opening of schools and enrollment of new classes in medicine brings forward the constant recurring need for better financing medical education.

With only about 20 per cent of the medical school costs of education being borne by the student, how to secure the other 80 per cent of the medical problem facing all medical schools. With rising costs and constant pressure to increase medical school enrollment to meet the needs of our rapidly growing population, budgets are usually found to be inadequate.

Careful studies have been made in an attempt to find ways and means to lower costs. While some economies have been found in increased efficiency, no major reduction in costs can be expected without a corresponding lowering of the quality of medical education.

We believe that standards must be maintained, and we appeal to all medical graduates to aid their medical schools through annual contributions to the American Medical Education Foundation. Every dollar given to AMEF is returned to the medical school indicated by the donor. This is unique in that all overhead is underwritten by the American Medical Association.

The combined giving of individuals through AMEF with that of the National Fund for Medical Education (industry), on the average, provides each medical school with almost the amount of money needed to run one basic science department. These gifts are vital to the maintenance and progress of the medical school. Every medical graduate should give at least $10.00 per year to AMEF, designated for his school. All M.D.'s have the responsibility to see that medical graduates of the future have the opportunity to obtain a first quality medical education.

Remember your medical school! Give to AMEF.

Sincerely,

William S. Stone, M.D., *Chairman*
Committee to Cooperate with American
Medical Education Foundation

Component Medical Societies

ALLEGANY-GARRETT COUNTY MEDICAL SOCIETY

LESLIE E. DAUGHERTY, M.D.

Journal Representative

FIFTY-FIVE YEARS AGO

The late Dr. Christopher C. Jacobs, of Frostburg, was born November 16, 1850 and died September 12, 1905. In 1903, two years before his death, he brought the first X-ray machine to Allegany county. Constructed in Germany, it was brought over by slow boat and assembled in the back room of the Will Shay Drug Store. Pharmacist Will Shay later became the X-ray technician for Dr. Frank Garnett Cowherd, a roentgenologist at the Memorial Hospital, Cumberland.

The X-ray tube was activated by a static machine and one of Cumberland's living ex-Judges, D. Lindley Sloan, was the first to have a "picture" made of a broken arm. The X-ray glass plate was developed in a local photograph gallery.

Thus, eight years after its discovery, November 8, 1895, it was being used in Allegany county in the treatment of patients.

It was said of Dr. Jacobs "He was a stately gentleman, dressed like a fashion plate and rode in a carriage driven by two prancing horses and preceded by two greyhounds on his rounds to see his patients." He was elected a member of the Medical and Chirurgical Faculty in 1890, was both a Mason and an Elk and participated in scientific discussions in the county medical society.

PERSONALS

Dr. O. R. Roth and his wife, of Cumberland, attended a garden party given by Queen Elizabeth at Buckingham Palace, in London, on July 17th. Dr. Roth is on a Fellowship at Mt. Vernon Hospital, London, specializing in radiology.

Dr. Ralph Calandrella, of Kitzmiller, has been reelected president of the Garrett County School Board.

Dr. Herbert H. Leighton, of Oakland, recently addressed the Auxiliary of the Memorial Hospital of Garrett County. His topic was "Out Patient Service."

Dr. Harold W. Eliason, Cumberland, has been reappointed by the Governor to the Advisory Council on Hospital Construction in Maryland.

At a recent meeting of the Potomac Council, Boy Scouts of America, Dr. John Davis, of Frostburg, was elected to serve as a member of its Executive Board.

Dr. James H. Feaster, of Oakland, is Deputy Medical Examiner for Garrett county.

Dr. Carlton Brinsfield, Cumberland, spent the last two weeks of June on active duty with the United States Air Force at Maxwell Air Force Base, Alabama, attending the Reserve Officers Orientation Course at the Staff and Command School. Dr. Brinsfield is a lieutenant colonel in the Air Force Reserve.

Dr. Mildred Sheesley Wagner and husband, announced the birth of a son in July. Dr. Wagner is a physician practicing in Westernport.

BALTIMORE CITY MEDICAL SOCIETY

CONRAD ACTON, M.D.

Journal Representative

A special meeting of the Executive Board, Section officers and Program Committee of this Society was held on January 17th. Twenty attended this gathering. Its purpose was to discuss waning attendance at *regular* meetings.

President Firor opened the meeting by mentioning the embarrassment he felt when famous out-of-town speakers found so few listeners.

In an effort to solve our problem, some medical societies in other States had been asked how they dealt with it. The Philadelphia Medical Society replied that its poor attendance perhaps was due to having too many meetings, and that securing parking space was an added difficulty. It, therefore, formed subdivisions, each holding separate meetings. This solved the parking problem, at least, and there was some indication that attendance was rising.

The New York correspondent also believed that having too many meetings reduced attendance at each. He said "Some people come to business meetings and others come to scientific meetings." He stated that only one recent talk—a Panel on heart

disease, held soon after President Eisenhower's attack—had been really well attended.

At *our* special meeting, many opinions were given as to the reasons for poor attendance and suggestions were made for increasing it.

President Firor said that the chief reason for having general meetings was that a large assemblage was indicative of a strong Society, and a small gathering of a weak one.

Drs. Ferguson and Filtzer, of the Orthopedic Section, wanted chief consideration given to the basic sciences. The advantages and disadvantages of publicity were overhauled. Prepayment, by assessment, for meals and cocktails was suggested. However, Dr. Firor pointed out the difficulty in finding a place that not only served good food but had adequate space for meetings.

Dr. Krulevitz, Chairman of the Section on General Practice, believed that one reason so few general practitioners came to meetings was that they found the time inconvenient. He proposed a social hour (with wives invited) in connection with scientific sessions. Dr. Krulevitz also thought there might be hidden factors discouraging these doctors from attending. They might think the Society too autocratic (believing that the officers hand down their mantles from generation to generation). Also, as the officers are usually specialists, a general practitioner might feel that his viewpoint would be so disregarded that he really had no say in the Society's affairs.

Dr. Kimberly, Treasurer, recalled that a survey proved the consensus to be that Friday night was the most convenient and 8:30 the best hour.

Dr. Frank Geraghty, past president and longtime secretary before that, did not think that holding meetings on Fridays was the reason for poor attendance. He recalled that in the past refreshments had been served both before *and* after meetings. When members protested that food was wasted the practice was discontinued. He also said that it was impossible for any subject chosen for the address to have universal appeal, and that a slim audience would be just as embarrassing to a local as to an out of town speaker.

Dr. Wilson, Radiological Section, thought it important to agree as to the *aims* of meetings and believes their purpose is to strengthen the Society and *not* to educate its members. He favored having Sections sponsor meetings, inviting nationally known speakers to talk on subjects of general interest.

Dr. Trimble cited the phenomenal recent growth of the Johns Hopkins Medical and Surgical Association. This he attributed to the fact that alumni were stimulated by having sectional, rather than Society, meetings and at banquets were seated by classes and therefore had the same interests. (It was noted, however, that this group meets every second year and not six times a year, as does our Society).

Next the question of an honorarium for speakers was broached, particularly for full-time men on "limited" salaries.

The physical limitations of Osler Hall were brought up—lack of effective air conditioning, seats only recently made less uncomfortable, and the size of the hall limit the attendance. However, Drs. Classen and Kimberly agreed that we must not leave the Medical Chi building at this time.

It was also mentioned that outlying practitioners might be unaware of the improvement in parking facilities near the building.

Dr. Russell Fisher believed it proper to encourage Sections to meet on the night on which the general meeting is held. Several Sections could then organize a combined scientific session. Afterwards Section business could be transacted in the small Faculty rooms.

Another proposal was that chairmen of the Sections should be members, ex officio, of the Executive Board.

A vote was taken for preferences in the type of dinner to be held. The majority were in favor of a stag affair.

The sending of copies of the Minutes to all members, or a limitation to those attending meetings was discussed but no decision was made. Copies of the Minutes of *this* meeting were promised to all present.

The meeting adjourned with a renewed spirit of the urgency and importance of the problem seeming to have imbued all who came.

BALTIMORE COUNTY MEDICAL ASSOCIATION

CHARLES HERMAN WILLIAMS, M.D.
Journal Representative

MINUTES OF MEETING

The regular meeting of the Baltimore County Medical Association, Inc. was held on Wednesday, June 18, 1958 at 1:00 p.m. in the Stafford Hotel, Baltimore. President Clarence E. McWilliams presided.

Dr. McWilliams presented Dr. William Pillsbury with a Past-President Certificate stating the appreciation of the members for Dr. Pillsbury's faithful service as president.

Mrs. John W. Rehberger, president of the Woman's Auxiliary, presented the following girls who were awarded nursing scholarships by the Auxiliary: Margaret M. McGuire, Mercy Hospital; Carol Sticker, Johns Hopkins; and Patricia Burton, Church Home and Hospital. Mrs Rehberger said that the scholarships totaled $795 and that ten have been presented to date. Money for the fund is received from the annual Doctors' Day dinner dance. Mrs. Rehberger asked the members to support this project each year. Each girl expressed her appreciation for being selected to receive a scholarship.

Dr. Reese introduced Dr. Gerald Galvin who presented a film entitled "Time and Two Women" which was prepared by the American Cancer Society. After the showing of the film, Dr. Galvin spoke briefly on its purpose.

Dr. Reese then introduced Dr. Janet B. Hardy, director of the Cerebral Palsy project. Dr. Hardy explained the function of the research project now underway on a local and on a national basis. Dr. Hardy urged the doctors to give their cooperation and support to the project if called upon.

* * * * *

Dr. Hollander, chairman of a special committee appointed to study the section of the by-laws concerning the duties of the Committee on Medical Ethics, Credentials and Membership reported that the members of the committee (Dr. Pillsbury and Dr. Strobel) had met and recommended the following changes which he offered in the form of a Resolution:

CHAPTER I—CHARGES OF MISCONDUCT

Section 7. A member who has been found guilty of a criminal offense or of gross misconduct as a physician or as a citizen, or who is accused of violation of the Code of Ethics of the American Medical Association or of conduct such as to bring discredit upon the medical profession may be liable to: a). Censure, b). Suspension, or c). Expulsion from this Association. Charges shall be made in writing and shall be delivered to the Secretary-Treasurer, who shall immediately furnish copies to the accused and to the Chairman of the Committee on Grievances, Credentials and Membership. The Committee shall investigate the charges on their merits, and shall report within thirty (30) days to the Board of Governors that the charges are, or are not, sustained by the available evidence. All possible efforts at mediation, conciliation, or reformation shall be exhausted before formal charges are filed with the Board, and the accused member shall have ample opportunity to be heard in his own defense.

STATUS OF A MEMBER UNDER SUSPENSION

Section 9. During any period of suspension, a member shall be deprived of all of the rights and privileges of membership including Physician's Defense, but shall remain liable for all dues and assessments. Upon termination of the period of suspension, all rights and privileges shall be restored automatically.

CHAPTER IV—BOARD OF GOVERNORS

Section 1. . . .The Board shall act as advisor to the President in matters of statewide concern to the medical profession and may make recommendations to the Association. The Board shall also act to adjudicate cases and charges submitted to it by the Committee on Grievances, Credentials and Membership. The Board may a). Censure, b). Suspend for not more than one (1) year, or c). Expel a guilty member; and/or may make appropriate representations to the State Board of Medical Examiners. The convicted member shall have the right of appeal to the Professional Conduct Committee of the Medical and Chirurgical Faculty of Maryland.

Dr. Hollander also presented the following Resolution to the Medical and Chirurgical Faculty:

WHEREAS an increasing proportion of physicians are living to an age at which degenerative processes take their toll; and whereas such processes may render a physician unfit to practice medicine without his being aware of the fact; and
WHEREAS continued engagement of such a physician in the practice of medicine may become dangerous to the public and to the profession;
BE IT HEREBY RESOLVED that it shall be within the proper purview of the Medical and Chirurgical Faculty of the State of Maryland, upon representation in writing by two or more of its members, to examine into the physical and intellectual status of such physicians and to take what steps may seem indicated to protect the public and the profession.

* * * * *

Dr. Martin J. Feldman was voted into Active Membership as a transfer from the Baltimore City Medical Society. Dr. William Roemmich's application for transfer from Affiliate membership to Active was approved.

Dr. McWilliams advised that the Standing and Special Committees had been appointed and the complete list would be distributed to the members.

Dr. Pillsbury stated that according to Chapter 3, Section 1 (b) of the By-Laws there now existed a vacancy on the Board of Governors. Dr. McWilliams stated he would appoint a member to fill this vacancy.

Dr. Dalmau requested to be relieved of his appointment as an Alternate Delegate and Dr. Charles Williams, Pikesville, was unanimously elected to fill this vacancy.

Dr. McWilliams read a communication from the Medical and Chirurgical Faculty which granted Emeritus Status to Dr. Walter Hammett. This was at the request of the Association.

There being no further business to discuss, the meeting adjourned.

FREDERICK COUNTY MEDICAL SOCIETY

LOUIS R. SCHOOLMAN, M.D.

Journal Representative

The regular June meeting of the Society was held at a cabin on Fishing Creek in the northern end of the county. The main event of the evening was a steak dinner. While the members rested after this arduous duty, they listened to a talk by Mr. "Lefty" Kreh on tying and casting flies.

HARFORD COUNTY MEDICAL SOCIETY

FREDERICK J. HATEM, M.D.

Journal Representative

The Harford County Medical Society held its annual crab feast on June 28th at Gabler's Shore on Bush River. This is the only event sponsored by the Society to which members' families are invited. It was very well attended, as usual, and everyone enjoyed it.

Although the Society rarely convenes in July or August, this year a social scientific meeting was held on July 24th. This was followed by a dinner at the Bayou Restaurant in Havre de Grace which, as always, was excellent. Dr. Joan Schnaufer, pediatric surgeon associated with Children's and Union Memorial hospitals, gave a splendid talk on congenital abnormalities of the newborn, with special reference to those of the gastro-intestinal tract.

There was no business meeting.

TALBOT COUNTY MEDICAL SOCIETY

JOHN N. ROBINSON, M.D.

Journal Representative

The following were elected officers for 1958: Dr. Arthur B. Cecil, Jr., President; Dr. John S. Green, III, First Vice President; Dr. Guy M. Reeser, Jr., Second Vice President; Dr. Louis S. Welty, Secretary-Treasurer; Dr. Thurston Harrison, Delegate; Dr. James H. P. Garnett, Alternate; Dr. Thurston Harrison, to serve on Faculty Planning Committee.

The Society believes that there should be better service for those unable to locate a doctor during emergencies and has organized a call system with twenty-four hour coverage. This service will be staffed by volunteers.

On July 17th the Society members attended the Four County Medical Meeting held at the Shamrock Inn in Chester. The dinner was excellent and the discussion of *Basilar Artery Disease* by Dr. Van Buskirk, Professor of Neurology at the University of Maryland, was unusual and interesting.

WASHINGTON COUNTY MEDICAL SOCIETY

ARCHIE ROBERT COHEN, M.D.

Journal Representative

The third regular quarterly meeting of the Washington County Medical Society was held on July 10, 1958 at the Hotel Alexander in Hagerstown.

The meeting was preceded by cocktails (which were enjoyed by all) and a dinner. After the dinner, Dr. J. W. Layman, President of the Society, introduced Mr. Walter Kirkman of the State office. Mr. Kirkman introduced Mr. John Sargeant, the new Executive Secretary of the Medical and Chirurgical Faculty.

Mr. Kirkman discussed several letters, received in Baltimore and sent by groups of citizens from the eastern portion of Washington County, which requested assistance in securing an additional physician for this area. It was recommended by the members of the Washington County Medical Society that these letters be referred to the State Committee on Rural Health for additional study and recommendations both to the State office and to the Washington County Medical Society. It was recognized that this procedure would be somewhat different from that followed in the past when this type of study was handled directly by the State office.

The members of the Washington County Medical Society felt that, since two members of the State Committee are Washington County residents, the matter could be handled on a more personal basis with the groups that had written to Baltimore. Also, the State Committee on Rural Health, which recently had absorbed the functions of the Committee for the Better Distribution of Physicians, could add this to their agenda. It was also felt that as the Washington County Medical Society has a regular constituted Committee on Rural Health and as this committee works with the State committee, the problem could be handled at the local level.

The Constitution and By-Laws Committee reported on their studies of the Constitution and recommended several changes for clarification.

Social Security for physicians was also discussed at the meeting with pros and cons.

The Picnic Committee reported on its plans for the annual picnic of the Society to be held on Thursday, August 21st, along the Potomac.

ADDENDUM

One of the members of the State Committee on Rural Health worked locally with interested citizens and was able to procure an additional physician to serve the eastern section of Washington County. It is understood that the new doctor will begin practice in the area in the near future.

WICOMICO COUNTY MEDICAL SOCIETY

THOMAS C. HILL, JR., M.D.

Journal Representative

During the month of April a Poison Control Center was established at the Peninsula General Hospital, Salisbury, under the direction of William C. Morgan, M.D. assisted by Robert Saunderson, M.D., Charles H. McBeth, Ph.D., Kendrick McCullough, M.D. and Steve Tymkiw, M.D. This service is sponsored by the Wicomico County Medical Society with the cooperation of the Peninsula General Hospital.

An up-to-date poison information library and treatment center is maintained and service is available on a twenty-four hour basis. Physicians rotate in taking calls asking for information concerning the ingredients of commercial products, antidotes and suggested treatments.

The hospital laboratory has available the latest analytical methods for the determination of substances causing poisonings.

On June 9th, at the monthly meeting of the Wicomico County Medical Society, Dr. Friemuth, toxicologist from Baltimore presided over an illustrated lecture and panel discussion on poisoning. He was assisted by Drs. Morgan and McBeth.

Obituaries

William J. French, M.D.

1878–1958

Dr. French, a specialist in child hygiene, and former health officer for Howard and Anne Arundel counties and the Southern Health District of Baltimore, died on August 3rd after a long illness.

Dr. French was a native of Boston, a graduate of George Washington University and did postgraduate work in pediatrics at Harvard.

During the first World War he served in France with the Red Cross and was decorated for his work by two foreign countries.

He was a member of many professional organizations and was on the Board of St. John's College, Annapolis. He is survived by his wife, Virginia French.

Charlotte Gardner, M.D.

1871–1958

On August 18th, Dr. Gardner (who was the oldest physician in the Cumberland area) died after an illness of six weeks.

Dr. Gardner was not only Cumberland's first woman physician but was the first pathologist in what was the only hospital in the town when she settled there in 1905.

Prior to that time, she had practiced for four years in Johnstown, Pennsylvania.

She received her B.S. degree at Cornell in 1896 and her Ph.D. at Women's Medical College of Philadelphia in 1899.

Eugene H. Hayward, M.D.

1877–1958

Following an illness of several months, Dr. Hayward died on August 5th in St. Joseph's Hospital.

He was born in Harford County and was a graduate of the old Baltimore City Medical College (which is now a part of the University of Maryland Medical School.)

Dr. Hayward served with the University Medical Unit in France in World War I, and was an Associate in Surgery at the University of Maryland.

He was also on the staffs of St. Joseph's, Bon Secours, Church Home and Mercy hospitals.

He was at one time president of the Baltimore City Medical Society, a member of the Faculty since 1906, and a Fellow of the American Medical Association and the American College of Surgeons.

He is survived by three sisters and one brother.

Roscoe L. Perkins, M.D.

1879–1958

On Friday, June 27th, Dr. Perkins, a resident of, and the only physician living in Royal Oak, Talbot County, died at Easton Memorial Hospital.

He graduated in 1907 from Hahnemann Medical College of Philadelphia.

Dr. Perkins is survived by his wife, Clara F. Perkins and by a sister, Miss C. Aleda Perkins of Boston, Massachusetts.

S. James Thomison, Jr., M.D.

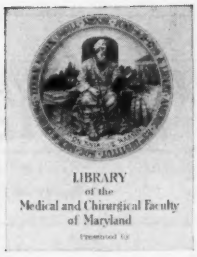
1919–1958

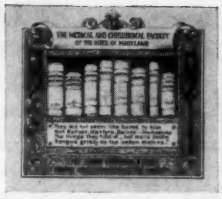
Dr. Thomison, who had practiced for thirteen years in Jarrettsville, Harford County, died suddenly in Baltimore on July 16th.

He attended Friends School in Wilmington, Delaware; Dartmouth College, and the New York University Medical School.

Dr. Thomison began practice in Jarrettsville in 1945, after one year's service in the Navy at Norfolk.

He is survived by his wife, Georgia R. Thomison and two young daughters.





Library

Louise D. C. King *Librarian*

"Books shall be thy companions; bookcases and shelves,
thy pleasure-nooks and gardens." *Ibn Tibbon*

LIBRARY HOURS: Monday through Friday 9 a.m. to 5 p.m. Saturday 9 a.m. to 1 p.m.
PARKING AVAILABLE IN REAR OF BUILDING

DOCTORS A-JOURNEYING

A planned motor trip and a medical library may seem totally unrelated, but once you have read that delightful book by Dr. Alexander Hamilton entitled *Itinerarium* and published in 1907, you too, will wish to retrace his steps, not by horseback, ferry and boats, but in your own comfortable automobile.

The book is a day by day chronicle of the Doctor's journey in 1744, from Annapolis, Maryland to Marblehead, Massachusetts. There is a modernized map of his route to guide you and if you make the pilgrimage, may you not only obtain the health for which he was seeking but also have fun and education wrapped in sugar-coated pills and do take the book with you to read along the way.

There are few contemporary accounts of life in these United States of America in the early eighteenth century but Dr. Hamilton's is one of the best of these, depicting the countryside, modes of travel, customs, social life and of course, since he was an eminent Maryland physician, friend of our own Upton Scott, interesting peeps into medical practice in 1744. He speaks of looking for Ginseng near the Susquehanna and of "A greasy-thumbed fellow who professed physick and particularly surgery in the drawing of teeth." This was done apparently, with a great clumsy pair of blacksmith's forceps. He also speaks of New York as a rich place and deplores the excessive drinking done there. In Philadelphia, introduced by Dr. Bond to a coffee-house he was much impressed by "The ceremony of shaking hands, an old custom peculiar to the English, which was performed with great gravity." In New Haven, he describes Yale College as "A wooden building about 200 feet long and three stories high, in the middle front of which is a little cupola, with a clock upon it. It is not so good a building as that at Cambridge, nor are there such a number of students." The whole trip of 1,624 miles, with some stopovers, took him from May 30th to September 27th. He covers some of the most civilized parts of our country at that period and since he was a man of means and standing, his diary gives an insight into "The State of the Union" from all walks of life.

If you feel depressed about your profession, your country or civilization in general, a perusal of this entertaining book will encourage you. Life in those days was lusty, laced with ignorance, superstition, duplicity, courage, idealism and an unbounding faith in the future, which you will see justified as you make the same trip two hundred years later.

Maryland
SOCIETY OF PATHOLOGISTS INC.
PAUL F. GUERIN, M.D., *President* ROBERT D. SOLOMON, M.D., *Secretary*
Sinai Hospital, Baltimore 5, Md.

JOINT COMMITTEE OF FUNERAL DIRECTORS, PATHOLOGISTS AND HOSPITAL ADMINISTRATORS

The respective roles of the hospital administrative staff to prepare the death certificate and have it properly signed by the attending physician, of the pathologist to perform an autopsy when permitted by the responsible relative and of the funeral director to embalm the body and prepare it for burial are familiar to everyone. Frequently misunderstandings arise when these three groups fail to understand one another's problems and coordinate their various activities.

Joint committees composed of representatives from funeral directors' organizations, from local pathology societies and from hospital administrative staffs have been established in several metropolitan communities. Often the joint committee is initially organized to serve as a grievance committee to discuss particular instances of misunderstanding. Usually, if it meets regularly three or four times a year, it can in addition play a major role in promoting understanding between these various groups.

An example of one of the more frequent problems which this cooperative group can help solve is unnecessary delay in releasing the body to the funeral director. This may be caused by delay in the hospital administrative office responsible for completion of the death certificate and forms for transportation of the body. It may also result from delay in obtaining the permit for autopsy or from failure of the pathology department to perform the autopsy promptly. Often, too, the problem arises because relatives wish to view the body in the funeral home within a short time after death and do not understand that the autopsy may take several hours. This problem can usually be solved if the funeral director is informed with reasonable accuracy of the time when the examination will be completed and the body released.

The joint committee can properly help with many other matters which concern these various groups, such as: (1) discouraging the practice on the part of some funeral directors of charging an additional fee for embalming after autopsy; (2) encouraging funeral directors to aid in obtaining autopsy permissions; (3) helping in the establishment of tissue banks; and, (4) encouraging instruction of Residents in Pathology in proper techniques so that difficulties in embalming will not be encountered because of the autopsy.

The activities and aims of these joint committees are in the public interest and deserve the support of all pathologists, hospitals and funeral directors in the areas which they serve.

The Heart Page

Gordon Walker, M.D. – Coeditors – Robert Singleton, M.D.

A SERVICE OF
THE HEART ASSOCIATION OF MARYLAND

ASYMPTOMATIC ACYANOTIC CONGENITAL HEART DISEASE

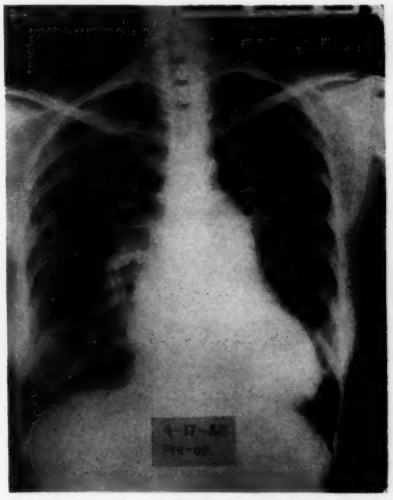
RICHARD S. ROSS, M.D.

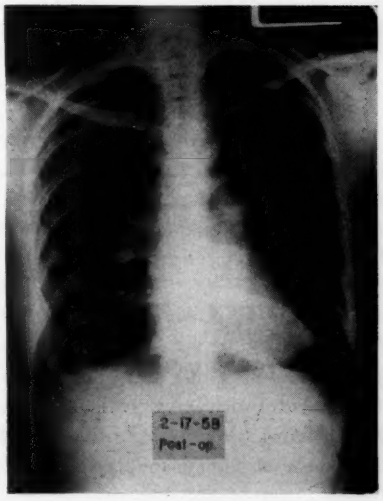
Asymptomatic congenital heart disease should be sought with vigor in the adolescent and young adult population. Appropriate therapy can produce a perfectly normal heart and life expectancy. Malformations which produce no symptoms in youth often result in early death. The physician must accept the fact that many normal individuals must be screened before the rewarding patient with previously unrecognized early disease is found. The physician doing college, employment or premarital physical examinations is often the first to examine a particular patient's heart—in fact, such a physician may be the only one to listen to a particular heart for many years to come. It is important for all practitioners to be aware of the clinical characteristics of the types of congenital heart disease which are treatable and potentially progressive.

Advances in diagnostic techniques and methods of surgical treatment have pointed out that all acyanotic, asymptomatic cases of congenital heart disease are not benign. Under special consideration are patent ductus arteriosus, atrial septal defect and ventricular septal defect. Cyanosis is not a usual feature of these conditions and few if any symptoms appear in adolescence. The appearance of symptoms is often associated with the development of the most important complication, pulmonary hypertension. Unfortunately, this complication is also the greatest barrier to successful surgical correction. Thus, if a normal circulation is to be restored these malformations *must* be detected in the asymptomatic stage.

The three conditions under consideration are all characterized physiologically by increased pulmonary blood flow. Blood returning to the left heart

Continued on page 613





Blue Cross - Blue Shield

RESPONSIBILITIES

DENWOOD N. KELLY[1]

If any one thing was emphasized during the recent public hearings relative to the requested increase in rates by Maryland Blue Cross, it was the increasing public realization of the importance of the medical profession's influence on health insurance.

The testimony brought out strongly the various factors that have contributed to the spiraling costs of hospital care and that many of these factors were quite beyond the control of either hospital administrators or the medical profession. At the same time, many hours of testimony were devoted to the discussion of "abuse" of Blue Cross in the form of unnecessary hospital admissions, unnecessary length of stay, and unnecessary use of optional hospital services, much of which can be controlled only by the medical profession.

A number of doctors stated that many hospital admissions could be eliminated by the addition of benefits for diagnostic services to the Blue Cross-Blue Shield programs. Some of them candidly admitted that they had sent patients, who were not acutely ill, to the hospital in order that diagnostic X-rays and laboratory tests could be secured at the expense of Blue Cross even though they knew the Blue Cross contract excluded benefits for such admissions. They said, no doubt truthfully, that their patients pressured them into this practice. Blue Cross and Blue Shield are now developing a program to cover these diagnostic services in hospital outpatient departments and physicians' offices. It will not be an inexpensive program and it can easily get out of hand if its services are not used judiciously.

There was mention of "Blue Cross Specials"—batteries of tests and X-rays, some apparently unnecessary—ordered by physicians when they knew the patient had Blue Cross and would not have to bear the expense of such services. It can be imagined how easily this practice can be transferred to services out of the hospital if they, too, are covered by the Blue Plans!

[1] Assistant Director, Maryland Medical Service, Inc.

Of course, the provision of these services out of the hospital should prevent the admission to the hospital of many of the non-acutely ill, with a resultant saving to Blue Cross, as far as those patients are concerned. Most hospital and medical people feel, however, that their places will merely be taken by others and that Blue Cross admissions will not decline, on the whole. This opinion is confirmed by the experience in connection with Bethlehem Steel employees, some 125,000 (workers and dependents) of whom are covered in Maryland under a special contract underwritten by Blue Cross-Blue Shield. For the past two years there has been a liberal out-of-hospital diagnostic program in effect and yet, in this same period, the average number of hospital admissions per thousand covered under this program has increased, while at the same time the utilization of the office diagnostic benefits has been heavy!

The hearings clearly emphasized that it is the doctor who admits the patient to the hospital. It is the doctor who orders the tests which are made, the treatment rendered, the drugs and medicines which are administered, the surgery performed, and then decides how long the patient remains hospitalized. While the doctor does not control the costs of specific services, he does control their use. As long as he controls this utilization, his is the major influence in determining the future of all health insurance.

One of the more disquieting things we at Blue Cross-Blue Shield frequently hear is the charge that Blue Cross is the "Hospitals' Plan" and Blue Shield is the "Doctors' Plan" in the sense that they were created and are operated mainly for the benefit of hospitals and doctors, rather than for the good of the public. It is equally important, probably more so, that people think of them as the "Subscribers Plans." If a doctor looks upon himself, not as an owner, but as a *trustee* of Blue Shield, and if hospital people consider themselves in a similar light in relation to Blue Cross, then they will be true sponsors and promoters of the Plans.

The crux of the whole matter is the average doctor's attitude toward the Plans and toward those subscribers who come under his care. Depending on this attitude is the success or failure of Blue Cross and Blue Shield.

Health Departments

One hundred and fifteen Baltimore children have been killed—one since this photograph was taken on April 25, 1958

BALTIMORE CITY HEALTH DEPARTMENT

Lead Paint Poisoning Has Killed 115 Baltimore Children

The photograph shows the volumes which contain 114 original death certificates of Baltimore children (all about two years old, who have died of lead paint poisoning since 1931) and some cans of lead paint with and without labeling to warn the purchaser. City Ordinance No. 1504, approved June 9, 1958, now requires adequate warning labels on cans of lead paint. The need for the ordinance was dramatized by recent experiences in Baltimore, one of which was in a home where a child had been poisoned by lead paint. The parent, who had removed the paint at the City Health Department's request, later went to a shop and purchased a large can of paint marked for interior use. It had no lead warning on it. (This can is at the left in the photograph.) The parent repainted the interior of his home and when, on a revisit, this new paint was analyzed by the Health Department, it was found to contain 9 per cent lead. He had put back on just what he had taken off.

Since 1951, there has been a hygiene of housing regulation against using lead paint in dwellings. What is sometimes forgotten is that some of the 630 children poisoned by paint since 1931 did not die but became life-long mental deficients from the teething age of about two years. The City Health Department now has an active preventive campaign to get rid of all lead paint in homes where Baltimore children might suffer. It is uncertain how many years of effort and education will be required to eradicate this preventable illness from the city.

Huntington Williams, M.D.

Commissioner of Health

Woman's Auxiliary Medical and Chirurgical Faculty

MRS. DAVID S. CLAYMAN, *Auxiliary Editor*

REPORT ON THE THIRTY-FIFTH ANNUAL MEETING OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

MRS. D. DELMAS CAPLES

The Thirty-fifth Annual Convention of the Woman's Auxiliary to the American Medical Association was held in San Francisco, June 23–27 in the Hotel Fairmont. The California Auxiliary was the official hostess and its members were most gracious and helpful throughout the meeting.

Registration was 2,155 with representatives from almost every component State auxiliary, including Alaska and Hawaii.

On the Sunday preceding the convention, Mrs. Paul Craig, President, and her officers held meetings. Also, Mrs. Craig appointed a corps whose duty was to watch the various convention activities. They observed those on the platform, noticed the audience reaction to the material presented and also asked from three to five people their opinions on each presentation as they left each affair. These official observations were coordinated and some of them were read on the last day of the convention. Having had the privilege of serving on the corps, I feel that a great deal was accomplished that will be of future benefit to everyone.

On Monday everyone arrived before 9:00 a.m., all bright-eyed and eager to greet old friends and make new ones. This first day was taken up with Round Table discussions and several of these were held, together with the National Chairmen acting as a panel with a few guest speakers.

One outstanding speaker at this session was Mrs. Tanner, of the A.M.A. Public Relations Department, who gave us some very good pointers on how to meet the Press. She suggested that we obtain and read "The Office Assistant," and "So You've Been Elected Publicity Chairman," from the Occidental Life Insurance Company, 1151 S. Broadway, Los Angeles, California; and the "Publicity Guidebook," from Leonard Davis, Public Relations Department, American Hearing Aid Association, 11 West 42nd Street, New York 36, New York.

Monday afternoon's session was taken up with more Round Table discussions—on the new report forms, history, and parliamentary questions and revisions. Mrs. George Turner told what she expected contributed concerning State history each year. Mrs. Mason Lawson answered questions about parliamentary procedure and named the reference books she uses. Mrs. William Mackersie listed the by-laws to be voted upon at the convention.

Later we dressed up in our "best bibs and tuckers" for our first social affair—a tea and fashion show at the Mark Hopkins, honoring Mrs. Paul Craig and Mrs. Arthur Underwood. Our hostesses were the Woman's Auxiliary to the California Medical Association, compliments of Pfizer Laboratories and J. B. Roerig and Company. The fabulous clothes and the lovely models were from Saks Fifth Avenue of San Francisco.

Mrs. Paul Craig, President, formally opened the convention on Tuesday morning. Much of the time was taken up by addresses of welcome, introductions, and reports of national officers.

Mrs. Craig gave a list of our contributions for the year from the national treasury:

1. Retirement plan for employees, through Travelers Insurance Company.
2. $3,000 loan (interest free) to the Student American Medical Auxiliary.
3. $100 to the World Medical Association.
4. $100 to the Crusade for Freedom.
5. $100 to the Student American Medical Association Foundation.
6. $5,000 to the A.M.E.F.; to this was added the $121,000 made by the component State auxiliaries for the year.

The Tuesday afternoon session started with the State project reports. Many of those reporting used slides to demonstrate their projects. Mrs. Jacobson, National Recruitment Chairman, said that the auxiliaries for this year had contributed almost

$100,000 toward scholarships and loans for paramedical careers.

Following the new ruling, each State reported on "Our Best" instead of giving an overall State report. Each national chairman acted as moderator for her projects report.

Also at this business meeting the report of the 1958 Nominating Committee was given, as follows:

President Elect: Mrs. Richard E. Stover—Florida

First Vice President: Mrs. Frank Gastineau—Indiana

Regional Vice Presidents

Eastern: Mrs. Paul Rauschenbach—New Jersey

North Central: Mrs. William Mackersie—Michigan

Southern: Mrs. William Thuss—Alabama

Western: Mrs. Matthew Hosmer—California

Constitutional Secretary: Mrs. C. R. Pearson—Wisconsin

Treasurer: Mrs. Harlan English—Illinois

Directors (2 years): Mrs. William Evans—Ohio, Mrs. M. A. Gold—Montana, Mrs. Shelley Davis—Georgia

Directors (1 year): Mrs. Paul Craig—Pennsylvania, Mrs. Harry Pohlmann—New York, Mrs. Rodney Stoltz—South Dakota, Mrs. Carl Burkland—California

Finance Secretary: Mrs. Jay Linn—Pennsylvania

Historian: Mrs. George Turner—Texas

Parliamentarian: Mrs. Roscoe Mosiman—Washington

The Wednesday morning session was opened by Mrs. Craig. Mrs. Mackersie, Chairman of Revisions of the Constitution and By-laws, presented the recommended revisions; among them "Article VI—House of Delegates—Section 3: In addition, one representative from each constituent Auxiliary for each 300, or major fraction thereof, paid members in good standing in the National Auxiliary as defined in Article IV, provided, however, that each constituent Auxiliary shall be entitled to at least one voting delegate in addition to the president." The revisions were approved. (They are given in detail in the Program Guide and will be sent to each State later in the summer.)

Next, our State president, Mrs. R. Shipley, gave a very good projects report on *Safety*.

A luncheon was held at the Mark Hopkins, in honor of Mrs. Craig and Mrs. Underwood, at which we had many guests from the American Medical Association. The chairmen of advisory councils to State medical auxiliaries and State medical society executive secretaries were also invited. Mr. Sargeant, Executive Secretary of the Medical and Chirurgical Faculty of the State of Maryland, was our guest and graciously presented Mrs. Shipley and me each with a lovely gardenia. The guest speaker, the Immediate Past-President of the American Medical Association, Dr. David B. Allman, had many kind words to say for the Auxiliary. Among other things he said " I even feel that the Auxiliary is responsible for my being president of the A.M.A., because I met so many wonderful people when my wife was president of the A.M.A. Auxiliary a few years ago."

Mrs. Craig presented a check for $126,000 to Dr. George F. Lull, President of the American Medical Education Foundation. This sum was raised by the auxiliaries in the past year.

In the afternoon the new recruitment film "Helping Hands for Julie" was shown. (Julie was a meningitis patient and the picture shows the care she received in each hospital department.) Clubs, organizations and television may obtain this film from Association Films, Inc., 347 Madison Avenue, New York 17, New York.

Thursday was an exciting day; one I am sure a lot of delegates wish they had not missed. Mrs. Craig was presiding. We were to vote on officers for 1958–59. Nominations were being received from the floor for President Elect. Our Mrs. George Yeager nominated Mrs. Frank Gastineau. Mrs. George Turner of Texas seconded the nomination. After quite a session, we voted for Mrs. Gastineau and Mrs. Stover, who had been selected by the Nominating Committee. There was a tie vote of one hundred and sixteen. Mrs. Stover withdrew and Mrs. Gastineau was elected. Mrs. Yeager then nominated Mrs. Stover for First Vice President and she was unanimously elected. Under the old Constitution and By-laws Mrs. Gastineau (a widow), could not have become president but the revisions approved the previous day made her eligible for the presidency.

By way of recreation, there was a tour of homes in the San Francisco area in the afternoon.

On Friday, there was a post-convention Board meeting for national officers, directors, committee chairmen, State presidents and presidents elect for

1958–59. Mrs. Underwood presided. This closed the convention for 1958.

Maryland members who attended the convention were: Mrs. E. R. Shipley, President; Mrs. E. Ellsworth Cook, Mrs. Whitmer Firor, Mrs. Robert Reiter, Mrs. Thomas Wheeler, Mrs. George Yeager and Mrs. D. Delmas Caples, President-Elect.

CONFERENCE HIGHLIGHTS

MRS. DAVID S. CLAYMAN

Representatives from almost all over the State attended a meeting of the Auxiliary to the Medical and Chirurgical Faculty on Tuesday, August 19th at the Green Spring Valley Inn. First on the agenda was the State Board meeting at which plans for the Semiannual Meeting at Ocean City were made. This was followed by a "Dutch Treat Luncheon" at which Dr. J. Sheldon Eastland and Mr. John Sargeant, President and Executive Secretary of the Faculty, were guests of the Auxiliary.

Dr. Eastland spoke on "How the Auxiliary Might Best Work with the Medical Society." He urged all the Auxiliary committee chairmen to contact their counterparts in the Medical Society and request the privilege of helping with any projects the Society might have. Dr. Eastland hopes for a combined effort this year.

After the luncheon, the members were divided into six groups, each with a moderator, a recorder and the State committee chairmen. There was also a roving reporter whose business it was to pick up ideas and opinions "off the cuff," and an expert.

The Committee on Membership urged that membership files be kept up-to-date with new addresses and phone numbers. It was noted that some counties have cocktail parties or dinners to get members to attend a meeting, and that a date should be decided upon for meetings and should not be changed.

Mrs. Paul Knotts, member-at-large, suggested that a form letter be sent to prospective members in the unorganized counties inviting them to join the Auxiliary and attend meetings in a neighboring organized county. The letter is to especially mention the Semiannual Meeting at Ocean City.

The Committee on A.M.E.F. discussed various methods of raising funds. Christmas cards have been selected and any member may order them by calling Mrs. Strobel. Sympathy and appreciation cards may also be purchased from her. Last year $837.00 was contributed to the National Fund. A goal of $1000.00 has been set for the coming year. One hundred and sixty thousand dollars is needed for the national A.M.E.F.

The group on programs in Ways and Means had many new ideas; among them—a picnic and swimming party for adults only; a creole party; boating trip; cards; and many other. Don't forget the visual aids and skits to stimulate meetings.

The group on Finance and Budget gave specific instructions concerning the types of membership in the Auxiliary. We now have two counties in which wives are automatically enrolled as members of the Auxiliary when their husbands join the Medical Society. The men pay the Auxiliary dues as part of their own dues.

There was also a group discussing Civil Defense. There are many programs and booklets containing information on this subject available. Each of us should learn the proper way to care for our families in case of air attack—how to set up a shelter and stock it with the right kind of food and fluids, and how to get rid of "fallout." It is most important to know the answers before trouble comes. . . .don't wait until it is too late.

The conference closed with a feeling that much had been accomplished. It was our first working conference and we felt a real thrill to have taken part in it.

BELL TELEPHONE COMPANY TELEVISION PROGRAM

"Gateways to the Mind"

Thursday, October 23—8 to 9 P.M.

This one hour color TV program shows how stimuli are received through the senses and transmitted to the brain. It is a scientific explanation of what really happens when we see, hear, taste, smell and feel. Dr. Frank Baxtor is the narrator.

Members of the medical profession who want to reserve this film should contact the Chesapeake and Potomac Telephone Company, 320 St. Paul Place, Baltimore 2, Maryland.

Book Reviews*

Human Parturition, Normal and Abnormal Labor. Norman F. Miller, B.S., M.D., F.A.C.S., A.C.O.G.; T. N. Evans, A.B., M.D., F.A.C.S., A.C.O.G.; R. L. Haas, A.B., M.D., F.A.C.S., A.C.O.G. Williams & Wilkins Co., Baltimore.

This book deals chiefly with one area of obstetrics, the culmination of pregnancy, labor.

The material presented can play an important role in student training. Familiarity with its content should provide the student with a foundation upon which he may safely build clinical experience.

Physical Diagnosis, by F. Dennette Adams, M.D., fourteenth edition, published by Williams & Wilkins Company, Baltimore.

The purpose of this book is to show how a patient should be examined; to describe the normal findings; to explain and interpret the important symptoms and signs of injury or disease. This is a most comprehensive book. It is a handy reference for the well-established physician and an invaluable text-book for the young doctor.

*The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

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HEART PAGE

Continued from page 607

from the lungs passes through the septal defect or the patent ductus and traverses the pulmonary circuit again. This physiological abnormality is responsible for the diagnostic features of these three conditions. Murmurs are present in all conditions characterized by increased pulmonary blood flow. A systolic murmur at the left sternal border which is constant in the face of respiration and position change should arouse suspicion. It should be emphasized that such a murmur may represent potentially serious heart disease.

The X-ray changes of increased pulmonary blood flow and the auscultatory findings are of equal importance in the recognition of these conditions. Here again there are certain minor differences, but *vascular lung fields, large pulmonary arteries* and *fullness of the pulmonary conus are common to all.* These changes are shown in top figure on p. 607, which is a routine chest X-ray from a patient with an atrial septal defect. The changes are clearly seen when this film is compared with the other film, which was taken one year after closure of the defect, by which time the signs of increased pulmonary blood flow had disappeared. Oftentimes the roentgen findings will be detected on survey photo fluorograms taken primarily for the detection of pulmonary disease. This alone is sufficient reason for further diagnostic studies, but the combination of a murmur and the X-ray changes of increased pulmonary blood flow makes further cardiac investigation mandatory.

At this point the patient should be referred to a center where special diagnostic techniques such as catheterization and angiocardiography are available. The referring physician should not feel obligated to make a precise diagnosis and should have no hesitation about the referral of any doubtful case. Diagnostic centers expect and prefer to study many normal individuals with peculiar murmurs or chest films in order to be certain that all patients with disease are recognized. It is almost always possible to make a diagnosis and many patients may be treated successfully with low operative risk. Precise diagnosis is of great importance even when surgical therapy is not immediately available, as patients on file by diagnosis can be recalled when appropriate treatment becomes available.

Patients with acyanotic, asymptomatic congenital heart disease are often recognized first on routine physical or X-ray examination. Cardiac murmurs and increased pulmonary vascularity on chest film are the chief diagnostic features. Irreversible changes which make treatment impossible can develop in these patients. Early precise diagnosis and evaluation for surgical correction is of the utmost importance.

Department of Medicine
The Johns Hopkins Hospital
Baltimore 5, Maryland

COMING MEETINGS

BALTIMORE CITY MEDICAL SOCIETY
and
INTERNAL MEDICINE SECTION, B.C.M.S.

Friday, November 7, 1958 8:30 p.m. 1211 Cathedral Street

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PEDIATRIC SECTION, B.C.M.S.

Tuesday, November 11, 1958 8:30 p.m. 1211 Cathedral Street

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BALTIMORE EAR, NOSE AND THROAT SOCIETY

Tuesday, November 11, 1958 Cocktails—6:15 p.m. Hopkins Club
Dinner—7:00 p.m.
Meeting—8:00 p.m.

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RADIOLOGICAL SECTION, B.C.M.S.

Tuesday, November 18, 1958 5:30 p.m. Hopkins Club

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TV PROGRAMS, B.C.M.S.

Saturday, November 8, 1958 WMAR TV 5:00 p.m.
"Headaches" Dr. William Speed

Saturday, November 22, 1958 WMAR TV 5:00 p.m.
"Laboratory Medicine and Pathology" Dr. Vernon Norwood

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CIVIL DEFENSE DISCUSSIONS

October 15, 22 and 29, 1958

Sponsored by the Baltimore City Civil Defense Health Service a series of talks on such topics as "Nuclear Weapons as Casualty Producers," "Treatment of Radiation Injuries," and "Civil Defense Emergency Medical Stockpile," will be given on three consecutive Wednesdays—October 15, 22 and 29—in the Frederick Douglass Senior High School, Gwynn's Falls Parkway and Pulaski Street. The sessions will start at 7:30 p.m. Parking space will be available at the Mondawmin Shopping Center.